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Boletín del Observatorio del Ebro Observaciones geomagnéticas en la isla Livingston - Antártida

OBSERVATORI DE L'EBRE



Consejo Superior de Investigaciones Científicas - Universitat Ramon Llull

BOLETÍN DEL OBSERVATORIO DEL EBRO



OBSERVACIONES GEOMAGNÉTICAS DE LA ISLA LIVINGSTON, ANTÁRTIDA 2004 Y CAMPAÑA 2004-2005

LIVINGSTON ISLAND GEOMAGNETIC OBSERVATIONS, ANTARCTICA 2004 AND 2004-2005 SURVEY

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Por - by

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Observatori de l'Ebre Roquetes 2005

1. INTRODUCCIÓN

En este Boletín se presentan las observaciones magnéticas registradas en el Observatorio Geomagnético de la Isla Livingston durante el año 2004, incluyendo la Campaña Antártica 2004-2005. La instalación y operación del Observatorio se enmarcaron en el Proyecto ANT95-0994-C03 del Programa Nacional de Investigación en la Antártida, continuado por los Proyectos ANT98-0886, REN2000-0833 y REN2003-08376-C02-02. Con este propósito, durante la campaña 1995-1996 se procedió al montaje de las casetas que en la actualidad albergan la estación magnética, en la Base Antártica Española (BAE) Juan Carlos I de la Isla Livingston (Islas Shetland del Sur) y, paralelamente, a la verificación de la estación magnética así como de los equipos de medida absoluta del campo geomagnético, en el *Observatori de l'Ebre*. Una evaluación de la homogeneidad espacial de las variaciones registradas, así como de la particular anomalía magnética cortical en el Observatorio pueden encontrarse en Torta et al. (1999a).

Durante la campaña 1996-1997 se instaló el variómetro, del que se tienen registros desde el 7 de Diciembre de 1996, y se procedió a la realización de medidas absolutas. En los anteriores Boletines (Torta et al., 1997a, 1998, 1999b; Gaya-Piqué et al., 2000, 2002; Marsal et al., 2003, 2004) se han ido resumiendo sucesivamente las medidas realizadas desde esa fecha hasta el 24 de Febrero de 2004, cuando el personal científico y técnico abandonó la BAE al final de la Campaña 2003-2004 (la Base sólo permanece ocupada durante el verano Austral). El Observatorio, sin embargo, se ha dejado en registro continuo automático durante los meses de Marzo a Noviembre de 1997 a 2004, habiéndose podido recuperar los datos de cada uno de esos períodos al inicio de la campaña siguiente (en concreto, el 4 de Diciembre de 2004 para el último).

La invernada correspondiente a este Boletín presenta períodos considerables sin valores (especialmente durante los meses de octubre y noviembre) para los elementos magnéticos H y Z, debidos a una escisión en el cable del par de bobinas de Helmholtz responsable de la adquisición de las medidas de Inclinación magnéticas (ver apartado 3.1), con lo que sólo se dispone de datos de la Declinación (D) y campo total (F) para dicho periodo. Otros intervalos (más cortos y para todos los elementos) sin datos corresponden a cortes en el suministro eléctrico desde la BAE.

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Desde la Campaña 1999-2000 los valores del campo registrados por el Observatorio se transmiten vía satélite, bien utilizando el Meteosat hasta el Geomagnetic Information Node (GIN) de la red INTERMAGNET de Edimburgo, bien utilizando el GOES hasta el GIN de Ottawa, donde son recuperados por el *Observatori de l'Ebre*. Sin embargo, la calidad de las transmisiones fue deteriorándose progresivamente, y si bien los datos son actualmente enviados, se ha decidido no difundirlos a través de Internet debido a que la información recibida es incompleta.

2. SITUACIÓN GEOGRÁFICA

La instalación del observatorio requirió la edificación de tres casetas térmicamente aisladas y construidas con materiales amagnéticos. La zona de emplazamiento de la estación magnética fue definida después de un estudio realizado por el *Instituto Geográfico Nacional* (Casas et al., 1992) durante la campaña 1990-1991. Los resultados del levantamiento magnético efectuado mostraron que el lugar más apropiado es la zona de Punta Polaca, situada al Oeste de las instalaciones de la BAE y a unos 350 m de distancia de ellas aproximadamente. Asimismo, el lugar se encuentra suficientemente alejado del conjunto de instalaciones de la BAE para que no existan riesgos de contaminación de los registros magnéticos debido a la influencia

de la Base o a efectos antropogénicos. De las tres casetas, una aloja los sensores de un magnetómetro vector; otra contiene la electrónica, el sistema de control y adquisición de datos; y la tercera alberga el magnetómetro para la realización de medidas absolutas.

Las coordenadas del pilar fundamental son las siguientes:

| Latitud Geográfica | 62° | 39' | 44'' | \mathbf{S} |
|------------------------|-----|-----|--------|--------------|
| Longitud Geográfica | 60° | 23' | 41" | \mathbf{W} |
| Latitud Geomagnética* | 52° | 30' | 59" | S |
| Longitud Geomagnética* | 8° | 32' | 52" | \mathbf{E} |
| Altitud s.n.m. | | | 19.4 m | |

^{*}Calculado a partir de la 9^a generación del IGRF para la época 2004.0.

A 460 m en dirección Este del pilar fundamental se clavó un jalón como marca de referencia para la determinación de la Declinación. El acimut determinado entre la línea pilar-jalón y el Norte Geográfico es 90° 52' 3.66".

3. INSTRUMENTOS Y OPERACIÓN

3.1. MAGNETÓMETRO VECTOR

El instrumento principal de la estación magnética automática está constituido por un magnetómetro de protones que mide la intensidad total del campo (F). El sensor de este magnetómetro está montado en el centro de dos conjuntos de bobinas de Helmholtz mutuamente perpendiculares orientados respectivamente según las direcciones dadas por la Declinación e Inclinación locales. Al aplicar corriente a esas bobinas y medir la magnitud de los vectores resultantes, pueden obtenerse los cambios en la Declinación, D, y la Inclinación, I; el sistema se conoce como configuración δD/δI. La estación fue desarrollada por el Geomagnetism Group del *British Geological Survey* (BGS) en Edimburgo. Los detalles técnicos de la misma pueden encontrarse en Riddick et al. (1995), y una descripción resumida de su fundamento y operación en Torta et al. (1997b).

Un PC compatible en la caseta central comunica con el magnetómetro para controlar la adquisición de datos y la conmutación de corriente en las bobinas a través de las interfases serie y paralelo estándares. Dicha caseta aloja asimismo la electrónica que permite suministrar corriente estable a las bobinas $\delta D/\delta I$. La sincronización de tiempo viene efectuada por un receptor GPS.

3.2. MEDIDAS ABSOLUTAS

Para la realización de medidas absolutas se ha utilizado un DI-flux ELSEC 810A, que consta de un magnetómetro de núcleo saturado o fluxgate cuyo sensor viene montado en un teodolito amagnético Zeiss 015B. La electrónica se encuentra en la misma caseta.

El procedimiento de observación está basado en la determinación de campo nulo para la obtención de D e I. Para eliminar los errores de colimación entre el sensor y el eje óptico del teodolito, así como los debidos al "offset" de campo nulo generados por la electrónica, se realizan observaciones en las cuatro posiciones posibles para cada elemento (ver, p.e., Jankowski y Sucksdorff, 1996, o Torta et al., 1997b).

Para la determinación contemporánea de la intensidad total (F), que se usa en conjunción con la inclinación (I) medida para calcular las intensidades horizontal (H) y vertical (Z), se extraen los valores correspondientes de la secuencia de medidas del magnetómetro vector cuando éste mide con las bobinas sin polarizar. Para su reducción a la posición del pilar fundamental se han efectuado medidas en el mismo con el magnetómetro de precesión de protones Gem Systems GSM19 de efecto Overhauser. La F en la estación automática

se obtiene con el magnetómetro GEOMAG SM90R, también de efecto Overhauser. Esas medidas han proporcionado una diferencia promedio de -2.2 nT (Fpilar fundamental - Fmagnetómetro vector).

4. PROCESO DE LOS DATOS

El proceso de datos preliminar, realizado en las instalaciones de la BAE, incluye la detección y eventual eliminación de valores espúreos, la visualización de los valores de polarización en D y en I del magnetómetro vector para la detección de posibles derivas en la fuente de corriente, y la visualización de los magnetogramas, con la adopción de líneas de base preliminares. Tras la compilación de la serie de medidas absolutas, se ha procedido a la determinación de las líneas de base definitivas según el siguiente procedimiento:

Para cada elemento observado D e I se han substraído de los valores de las medidas absolutas los valores correspondientes del magnetómetro vector (diferencias o líneas de base observadas). Sobre esta serie de diferencias se ha realizado un análisis que finaliza con la obtención de las líneas de base (diferencias adoptadas). Este proceso incluye un análisis de la dispersión local y global de la serie, el descarte de los valores con diferencias superiores a un umbral, y una interpolación de los datos no rechazados del tipo que se decida más oportuno según el caso, ya sea una media móvil, un ajuste lineal, cuadrático, etc. Las diferencias observadas y las correspondientes líneas de base adoptadas se ilustran en la fig. 1. Tras añadir estas últimas a las medidas del magnetómetro vector (y así trasladarlas a las referencias absolutas) se han producido los valores minuto definitivos para cada elemento. De estos valores se obtienen fácilmente los magnetogramas y las tablas de medias que se presentan a continuación.

Teniendo en cuenta la conducta manifestada durante las últimas campañas en las que se han realizado medidas absolutas, las líneas de base que se han adoptado en el caso de D para el período entre ellas obedecen a funciones lineales con las pendientes necesarias para pasar de las diferencias adoptadas al final de una campaña a las del principio de la siguiente (fig. 2). Sin embargo, debido a la avería que se ha producido en el magnetómetro vector en relación a la Inclinación magnética, no ha sido posible determinar la línea de base para este elemento durante la última invernada, pues en el momento de repararlo se varió inevitablemente su orientación espacial. Así pues, se ha adoptado arbitrariamente como línea de base durante el período Febrero - Octubre de 2005 el valor que ésta alcanzaba durante el último mes en que se realizaron medidas absolutas en el observatorio, es decir, se ha mantenido para toda la invernada el valor que tomaba la línea de base de I a finales de Febrero de 2005. Es por esta razón que se han omitido las medias anuales de los elementos derivados de I en la tabla 1 (ver sección 5).

A diferencia de lo mostrado en boletines anteriores, cabe observar que las líneas de base se presentan para los elementos D e I, pues son estos dos elementos los que se determinan tanto en el caso del magnetómetro vector como en el del DI-flux, siendo por tanto más natural la comparación directa entre ellos.

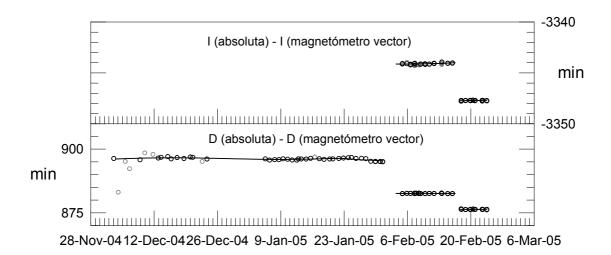


Fig. 1. Diferencias observadas (círculos) y líneas de base adoptadas (líneas continuas) para los dos elementos D e I. Los círculos en trazo fino corresponden a las diferencias descartadas antes de la adopción de la línea de base. Las discontinuidades que se observan son debidas al cambio de orientación inevitable que se produjo en dos reparaciones sucesivas del magnetómetro vector.

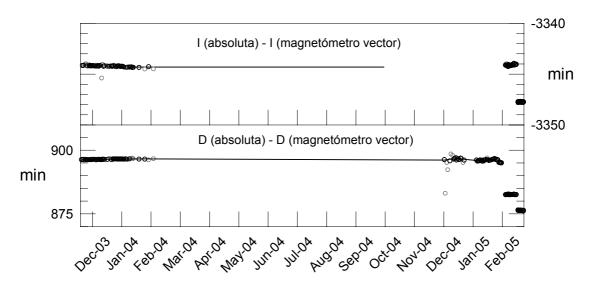


Fig. 2. Equivalente a la fig. 1 para el período completo de registro desde Noviembre de 2003. El período sin línea de base para I corresponde al tiempo durante el cual permaneció averiado el magnetómetro vector, desde Octubre de 2004 hasta Febrero de 2005.

5. PRESENTACIÓN DE LOS DATOS

Los valores medios anuales para todos los elementos del campo obtenidos hasta la publicación de este Boletín se presentan en la tabla 1. Puesto que las líneas de base adoptadas en la fig. 2 para el período sin medidas absolutas podrían diferir de las reales, damos en la tabla 2 las medias correspondientes únicamente a los períodos con referencias absolutas. Corresponden básicamente a las medias sobre los meses de Diciembre, Enero y Febrero de cada campaña. Una vez más, a causa de la avería que se presentó en el magnetómetro vector durante la última invernada, no fue posible reparar el instrumento hasta principios de Febrero de 2005, con lo que sólo se dispone de unos veinte días de datos para la Inclinación y sus elementos derivados (H, Z, X e Y). La media para ese período y para los citados elementos estaría centrada en la época 2005.1; no así para los elementos D y F, que lo están en la época 2005.0. Así pues, para unificar la tabla 2 se ha decidido desplazar la media de los elementos derivados de I hasta la época 2005.0 teniendo en cuenta la variación secular manifestada a lo largo de las 3 últimas campañas. Asimismo, añadir que dichas medias deben tomarse con precaución, pues corresponden a un período muy reducido y por lo tanto poco significativo.

| Año | D | Н | Z | Χ | Υ | I | F |
|--------|-----------|-------|--------|-------|------|------------|-------|
| 1997.5 | 14° 55.5' | 20522 | -30040 | 19830 | 5286 | -55° 39.7' | 36380 |
| 1998.5 | 14° 54.7' | 20465 | -29976 | 19776 | 5266 | -55° 40.7' | 36295 |
| 1999.5 | 14° 53.5' | 20415 | -29910 | 19729 | 5246 | -55° 41.1' | 36213 |
| 2000.5 | 14° 52.4' | 20369 | -29855 | 19686 | 5228 | -55° 41.8' | 36141 |
| 2001.5 | 14º 49.8' | 20319 | -29786 | 19642 | 5201 | -55° 42.0' | 36057 |
| 2002.5 | 14° 47.1' | 20262 | -29717 | 19591 | 5171 | -55° 42.7' | 35967 |
| 2003.5 | 14° 45.0' | 20210 | -29665 | 19544 | 5146 | -55° 44.1' | 35895 |
| 2004.5 | 14° 42.0' | - | - | - | - | - | 35813 |

Tabla 1. Valores medios anuales para todos los elementos del campo magnético. H, Z, X, Y y F vienen dados en unidades de nT.

| Año | D | Н | Z | Χ | Υ | I | F |
|--------|-----------|-------|--------|-------|------|------------|-------|
| 1997.0 | 14° 55.7' | 20554 | -30065 | 19860 | 5295 | -55° 38.5' | 36419 |
| 1998.0 | 14° 54.8' | 20504 | -29995 | 19814 | 5277 | -55° 38.6' | 36334 |
| 1999.0 | 14° 53.9' | 20447 | -29934 | 19759 | 5257 | -55° 39.9' | 36250 |
| 2000.0 | 14° 52.7' | 20399 | -29868 | 19715 | 5238 | -55° 40.1' | 36169 |
| 2001.1 | 14° 50.5' | 20345 | -29799 | 19666 | 5211 | -55° 40.6' | 36082 |
| 2002.0 | 14° 48.6' | 20298 | -29738 | 19624 | 5188 | -55° 41.0' | 36005 |
| 2003.0 | 14° 45.9' | 20246 | -29679 | 19578 | 5160 | -55° 42.0' | 35927 |
| 2004.0 | 14° 43.8' | 20194 | -29630 | 19530 | 5135 | -55° 43.4' | 35857 |
| 2005.0 | 14º 41.4' | 20144 | -29564 | 19486 | 5109 | -55° 43.8' | 35775 |

Tabla 2. Valores medios para los períodos con referencias absolutas.

Los datos que se presentan a continuación son:

- i) Índices K, calculados automáticamente mediante el método FMI, según una modificación del programa original (en lenguaje C) creado por P. McFadden (AGSO). Q y D indican los cinco días Internacionales de Calma y Perturbados de cada mes, respectivamente.
- ii) Magnetogramas diarios de la declinación (D), intensidad horizontal (H) e intensidad vertical (Z), mostrados secuencialmente y por meses.
- iii) Magnetogramas diarios de la intensidad total (F), mostrados secuencialmente y por meses.
- iv) Tablas mensuales de los valores medios horarios de D, H, Z y F. Todas las medias han sido calculadas a partir de valores minuto siempre y cuando el porcentaje de valores perdidos en el intervalo en cuestión no exceda el 10%.

Agradecimientos. Estos resultados forman parte de los Proyectos ANT95-0994-C03, ANT98-0886, REN2000-0833 y REN2003-08376-C02-02 de los sucesivos Planes Nacionales de I+D+I. Los autores desean expresar su más sincero agradecimiento a David Badia, de l'*Escola Superior d'Enginyeria de Telecomunicacions La Salle* por la realización de medidas absolutas en ausencia del personal del *Observatori de l'Ebre*, así como al personal técnico y científico de la BAE en las distintas campañas desde que se instaló el Observatorio, en concreto durante el período que comprende este Boletín a Joël Sans y Juan Luis Ruiz, así como al Servicio Geográfico del Ejército por la determinación de posiciones y acimuts. El apoyo técnico recibido por parte del Global Seismology and Geomagnetism Group del *British Geological Survey*, especialmente por parte de John C. Riddick, Christopher W. Turbitt y Simon Flower, han resultado ser también fundamentales. Durante esta última campaña se ha contado asimismo con la colaboración de Leroy W. Pankratz, del *United States Geological Survey*, y de Jennifer Parmelee, del *Geological Survey of Canada*, quienes nos han ayudado en la ardua tarea de mejorar las transmisiones de datos vía satélite.

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1. INTRODUCTION

In this Bulletin we give details of the magnetic observations recorded at the Livingston Island Geomagnetic Observatory during 2004, including the 2004-2005 austral summer survey. Both its installation and operation were on behalf of the National Program for Antarctic Research Project ANT95-0994-C03, followed by the ANT98-0886, REN2000-0833 and REN2003-08376-C02-02 projects. In order that this objective could be achieved, during the 1995-1996 survey, the magnetic observatory instrument accommodation was deployed at the Spanish Antarctic Station Juan Carlos I (Livingston Island in the South Shetland Island group). In parallel with this work both the variometer station and the absolute observing instruments were tested and calibrated at Ebre Geomagnetic Observatory, Roquetes, Tarragona, Spain. An assessment of the spatial homogeneity of the recorded variations, as well as of the particular observatory crustal anomaly biases are given in Torta et al. (1999a).

Both the variometer, deployed in a set of $\delta D/\delta I$ coils and the absolute instruments were installed during December 1996, with continuous recording and the absolute observing program beginning on December 7, 1996. In the previous Bulletins (Torta et al., 1997a, 1998, 1999b; Gaya-Piqué et al., 2000, 2002; Marsal et al., 2003, 2004) the measurements made between that date and February 24, 2004 were summarized. As this site is only manned during the Austral summer all scientific staff departs at the end of February each survey, but the magnetometers are left recording and we retrieve the data recorded throughout the winter at the beginning of the next survey season (in December 4, 2004 for the latest).

The winter epoch corresponding to this Bulletin presents considerable periods without data (specially during October and November) for the magnetic elements H and Z, due to a scission in the cable of the Helmholtz coil responsible of the acquisition of magnetic Inclination (see section 3.1), hence we only have Declination (D) and total Field (F) data for this period. Other intervals (shorter and for all the elements) without data correspond to current breaks from the station.

It is possible to obtain more information applying to:

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Since the 1999-2000 Survey, data recorded at the Observatory are transmitted either via Meteosat satellite to the INTERMAGNET Geomagnetic Information Node (GIN) at Edinburgh, or via GOES satellite to the GIN at Ottawa, being them afterwards retrieved by Ebre Observatory. Nevertheless, the quality of the transmissions has deteriorated progressively and although the data are now sent, it has been decided not to show them through Internet because the received information is incomplete.

2. POSITION

The installation of the observatory required the erection of three thermally isolated huts which had been prefabricated using non-magnetic materials. The location of the observatory was determined using the results of a study made by the Instituto Geográfico Nacional (CASAS et al., 1992) during the 1990-1991 field season. The results of this magnetic survey showed the most appropriate site to be around the area named as Punta Polaca, located to the west of the Station settlement and at approximately 350 m from the main base. Located at this position, the site is far enough from the settlement to avoid man-made disturbances. One hut houses the proton magnetometer and $\delta D/\delta I$ coils; the second contains the control electronics and the data acquisition system; and the third accommodates the D/I fluxgate theodolite for the absolute observations.

The coordinates of the absolute pillar are:

| Geographic latitude | 62° | 39' | 44'' | S |
|------------------------|-------------|------------|-------------|---------------------------|
| Geographic longitude | <i>60</i> ° | 23' | 41'' | W |
| Geomagnetic latitude* | <i>52</i> ° | <i>30'</i> | <i>59"</i> | S |
| Geomagnetic longitude* | 8 ° | 32' | <i>52''</i> | $\boldsymbol{\mathit{E}}$ |
| Height above msl | | | 19.4 n | n |

^{*} Computed from the 9th Generation of IGRF evaluated at 2004.0.

At a position 460 m to the west of the absolute pillar a fixed mark was constructed which is used as the reference mark in the determination of declination. The angle viewed from the D/I pillar between the azimuth mark and the geographic north (the azimuth of the mark) is 90° 52′ 3.66″.

3. INSTRUMENTS AND OPERATION

3.1. VECTOR MAGNETOMETER

The main instrument in the automatic magnetic observatory is a proton magnetometer used to measure total field intensity (F). This magnetometer is deployed at the centre of a pair of dual axis Helmholtz coils which are deployed parallel to the directions given by the local declination and inclination. By applying bias currents through these coils and measuring the resultant vectors, changes in declination, D, and inclination, I, may be obtained; this is known as the $\delta D/\delta I$ configuration. The equipment was developed by the Geomagnetism Group of the British Geological Survey (BGS) in Edinburgh. Its technical details are described by Riddick et al. (1995), and a summarized description of its principles and operation by Torta et al. (1997b).

An IBM compatible PC in the central hut communicates with the magnetometer to control the data acquisition and bias coil switching using the standard PC serial and parallel interfaces. This hut also accommodates the electronics which generates stable currents to the $\delta D/\delta I$ bias coils. Time synchronisation is provided by a GPS receiver.

3.2. ABSOLUTE OBSERVATIONS

For the absolute measurements of declination and inclination an ELSEC 810A D/I-fluxgate theodolite is used. It comprises a single axis fluxgate magnetometer sensor element mounted on a Zeiss 015B non-magnetic theodolite with the electronics package placed in the same hut.

The D/I observation procedure is based on the null-field technique to measure D and I. To remove the errors due to the misalignment of the magnetic axis of the fluxgate and the optical axis of the theodolite, as well as those due to the zero-field offset generated by the control electronics, the observations are made in four positions for each element (see, e.g., Jankowski & Sucksdorff, 1996, or Torta et al., 1997b).

The total field intensity (F) values, used in conjunction with the measured inclination (I) to calculate the horizontal (H) and vertical (Z) intensities, is obtained from the vector magnetometer, when it measures without polarizing the coils. F measured at the $\delta D/\delta I$ site is corrected for the site difference between the two positions before using it in the reduction of the observations. This correction was obtained by making simultaneous measurements of F on the one hand at the D/I pillar using a Gem Systems GSM19 Overhauser proton precession magnetometer and, on the other hand, F was measured at the automatic observatory using the GEOMAG SM90R Overhauser magnetometer. These measurements gave a mean difference of -2.2 nT (Fabsolute pillar - Fvector magnetometer).

4. DATA PROCESSING

The preliminary data processing, done at the Antarctic Station, included the detection and eventual elimination of any spikes in the data, the graphical inspection of the D and I polarization values in the vector magnetometer daily records to detect any drift in the current supply unit, the examination of the magnetograms, and the adoption of preliminary baselines. After the absolute measurements had been reduced, the following procedure was adopted to allocate definitive baselines:

For each observed element D and I, the corresponding vector magnetometer values were subtracted from the absolute measurements (observed differences or observed baselines). To this series of differences a sequential analysis was applied towards the determination of the adopted differences or adopted baselines. This process included an analysis of both the local and global dispersion of the series, the removal of the values with differences higher than a given threshold, and the most suitable interpolation of the not rejected data, regarding the given case: a running average, a linear or square fitting, etc. The observed differences and the corresponding adopted baselines are plotted in Figure 1. By adding the latter to the vector magnetometer values (and thus translating the vector data to the absolute references) the definitive minute values for each element were produced. From these values the magnetograms and the tables of means which are presented following were obtained.

Taking into account the behaviour exhibited during the last surveys in which absolute measurements were made, the baselines adopted in the case of D for the period in between are lineal functions with the necessary slopes to pass from the adopted differences at the end of the penultimate survey to those of the beginning of the last one (Figure 2). Nevertheless, due to the failure produced in the vector magnetometer in relation to the magnetic inclination, it has not been possible to determine the baseline for this element during the last winter, since the spatial orientation was unavoidably changed at the moment of reparation. Thus, the baseline adopted arbitrarily for the period February - October 2005 is the constant value reached during the last month that absolute measurements were taken; in other words, the value of the I baseline at the end of February 2005 has been kept for the whole winter. This is the reason why the annual means of the elements derived from I in table 1 have been omitted (see section 5).

Unlike former bulletins, note that baselines are presented for the elements D and I, given that these are the two elements actually determined both by the vector magnetometer and the D/I-fluxgate, hence being more natural their direct comparison.

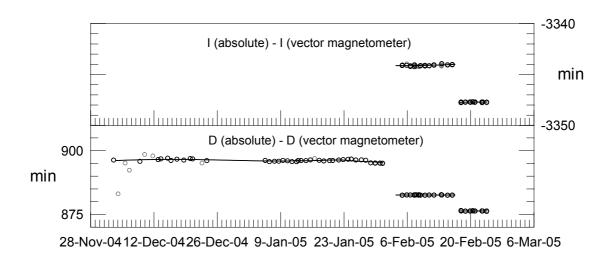


Fig. 1. Observed differences (circles) and adopted base-lines (lines) for the two elements I and D. Thin circles correspond to differences removed before the adoption of the baseline. The observed discontinuities are due to the inevitable change in spatial orientation in two successive reparations of the vector magnetometer.

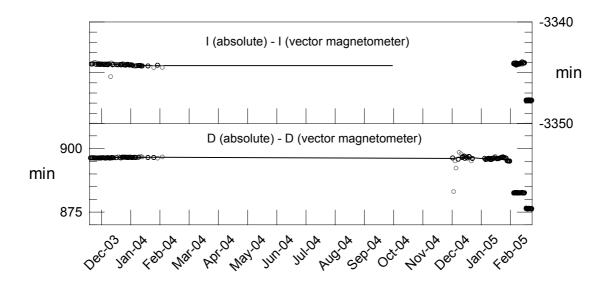


Fig. 2. As figure 1 but for the complete recording period from November 2003. The period without baseline for I corresponds to the time that the failure lasted in the vector magnetometer, from October 2004 to February 2005.

5. PRESENTATION OF DATA

The annual mean values for all magnetic elements obtained until the publication of this Bulletin are presented in table 1. Since the adopted baselines of figure 2 for the period without absolute measurements might differ from the actual ones, we give in table 2 the means corresponding to only the periods with absolute references, basically corresponding to the means over December, January and February of each Survey. Once again, because of the failure occured in the vector magnetometer during the last winter, it was not possible to repair the instrument until the beginning of February 2005, therefore, we only have about 20 days of data for the magnetic Inclination and its derived elements (H, Z, X and Y). The mean for this period and for the abovementioned elements would be centered at the epoch 2005.1; but not for the elements D and F, which are centered at the epoch 2005.0. Hence, in order to unify table 2 it has been decided to move the mean of the elements derived from I down to the epoch 2005.0, taking into account the secular variation exhibited during the last 3 surveys. Likewise, it must be pointed out that the mentioned means should be taken with caution, since the corresponding period is short, and hence little significant.

| Year | D | Н | Z | Χ | Υ | I | F |
|--------|-----------|-------|--------|-------|------|------------|-------|
| 1997.5 | 14° 55.5' | 20522 | -30040 | 19830 | 5286 | -55° 39.7' | 36380 |
| 1998.5 | 14° 54.7' | 20465 | -29976 | 19776 | 5266 | -55° 40.7' | 36295 |
| 1999.5 | 14° 53.5' | 20415 | -29910 | 19729 | 5246 | -55° 41.1' | 36213 |
| 2000.5 | 14° 52.4' | 20369 | -29855 | 19686 | 5228 | -55° 41.8' | 36141 |
| 2001.5 | 14° 49.8' | 20319 | -29786 | 19642 | 5201 | -55° 42.0' | 36057 |
| 2002.5 | 14° 47.1' | 20262 | -29717 | 19591 | 5171 | -55° 42.7' | 35967 |
| 2003.5 | 14° 45.0' | 20210 | -29665 | 19544 | 5146 | -55° 44.1' | 35895 |
| 2004.5 | 14° 42.0' | - | - | - | - | - | 35813 |

Table 1. Annual mean values for all magnetic elements. H, Z, X, Y and F are given in nT units.

| Year | D | Н | Z | Χ | Υ | I | F |
|--------|-----------|-------|--------|-------|------|------------|-------|
| 1997.0 | 14° 55.7' | 20554 | -30065 | 19860 | 5295 | -55° 38.5' | 36419 |
| 1998.0 | 14° 54.8' | 20504 | -29995 | 19814 | 5277 | -55° 38.6' | 36334 |
| 1999.0 | 14° 53.9' | 20447 | -29934 | 19759 | 5257 | -55° 39.9' | 36250 |
| 2000.0 | 14° 52.7' | 20399 | -29868 | 19715 | 5238 | -55° 40.1' | 36169 |
| 2001.1 | 14° 50.5' | 20345 | -29799 | 19666 | 5211 | -55° 40.6' | 36082 |
| 2002.0 | 14° 48.6' | 20298 | -29738 | 19624 | 5188 | -55° 41.0' | 36005 |
| 2003.0 | 14° 45.9' | 20246 | -29679 | 19578 | 5160 | -55° 42.0' | 35927 |
| 2004.0 | 14° 43.8' | 20194 | -29630 | 19530 | 5135 | -55° 43.4' | 35857 |
| 2005.0 | 14° 41.4' | 20144 | -29564 | 19486 | 5109 | -55° 43.8' | 35775 |

Table 2. Mean values for periods with absolute references.

The data presented next in this bulletin are:

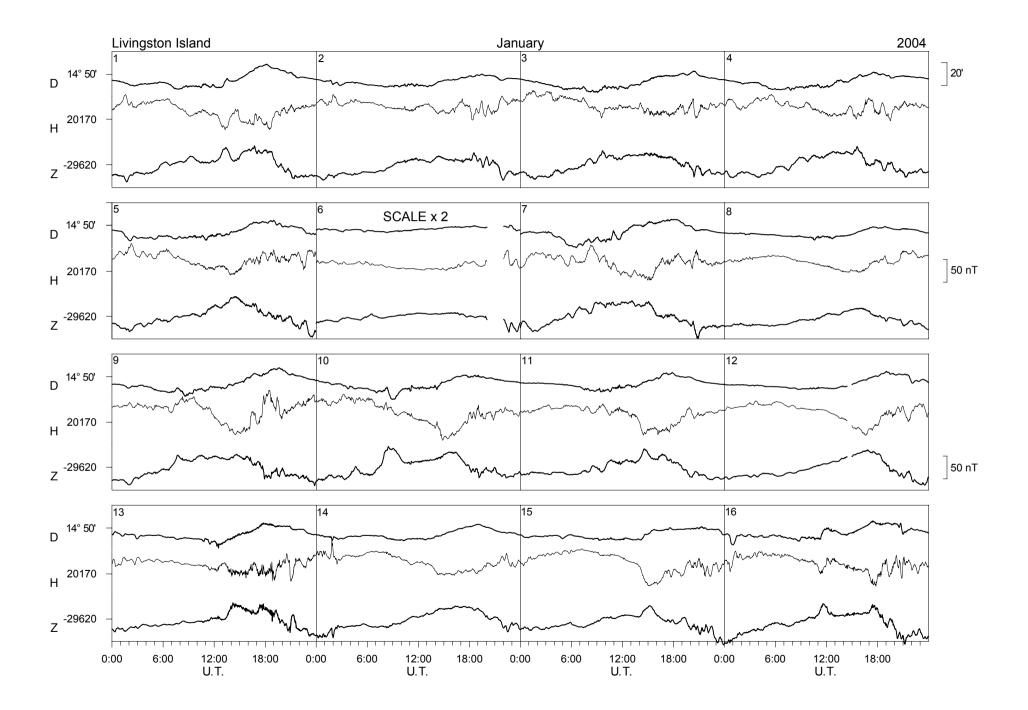
- i) Computer-produced K indices by means of the FMI method, according to a modification of the original C-language program created by P. McFadden (AGSO). Q and D refer to the five International Quiet and Disturbed days in each month, respectively.
- ii) Month-at-a-glance daily magnetograms of declination (D), horizontal intensity (H) and vertical intensity, (Z).
- iii) Month-at-a-glance daily magnetograms of total intensity (F).
- iv) Monthly tables of hourly mean values of D, H, Z and F. All means have been calculated from minute values and only whenever the percentage of missing values in the corresponding interval does not exceed 10%.

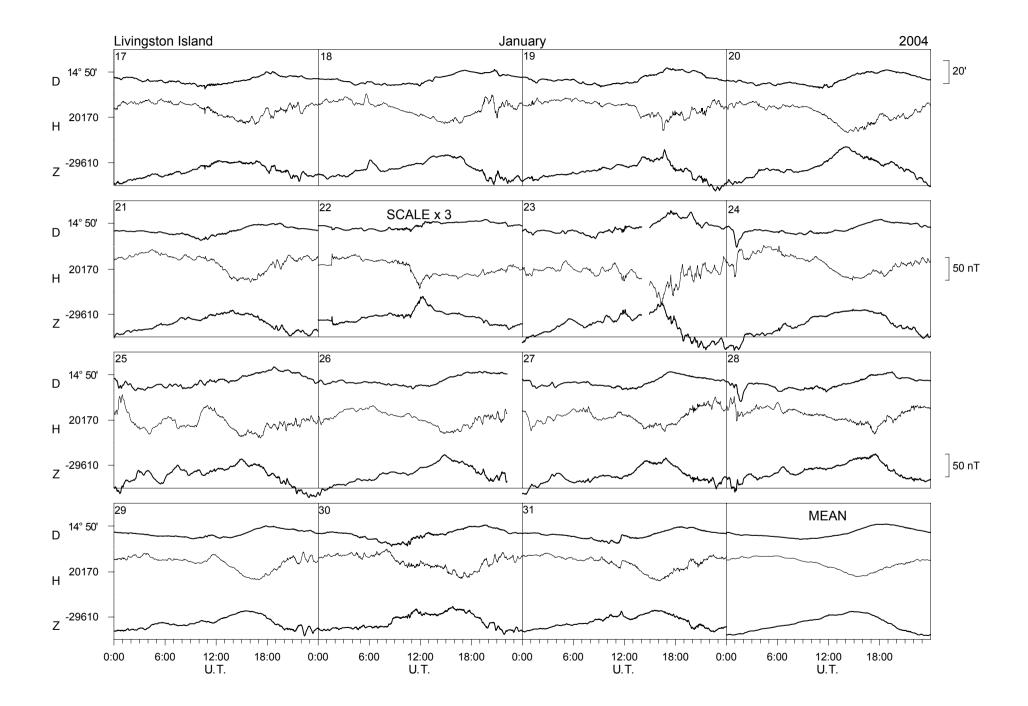
Acknowledgments. These results are part of the Research Projects ANT95-0994-C03, ANT98-0886, REN2000-0833, and REN2003-08376-C02-02, PN I+D+I, Spain. The authors would like to express their deep thanks to David Badia, from the Escola Superior d'Enginyeria de Telecomunicacions La Salle, for performing absolute measurements in absence of the staff from Ebre Observatory, as well as to the technical and scientific staff at the Spanish Antarctic Station during the Surveys from which the Observatory was deployed, in particular during the period covered by this Bulletin to Joël Sans and Juan Luis Ruiz, and to the Servicio Geográfico del Ejército for the measurement of positions and azimuth bearings. The technical support received from the Global Seismology and Geomagnetism Group of the British Geological Survey, specially from John C. Riddick, Christopher W. Turbitt and Simon Flower, have also turned out to be fundamental. Moreover, during the last survey we relied on the support from Leroy W. Pankratz, from the United States Geological Survey, and Jennifer Parmelee, from the Geological Survey of Canada, who have helped us in the arduous task of improving satellite transmissions.

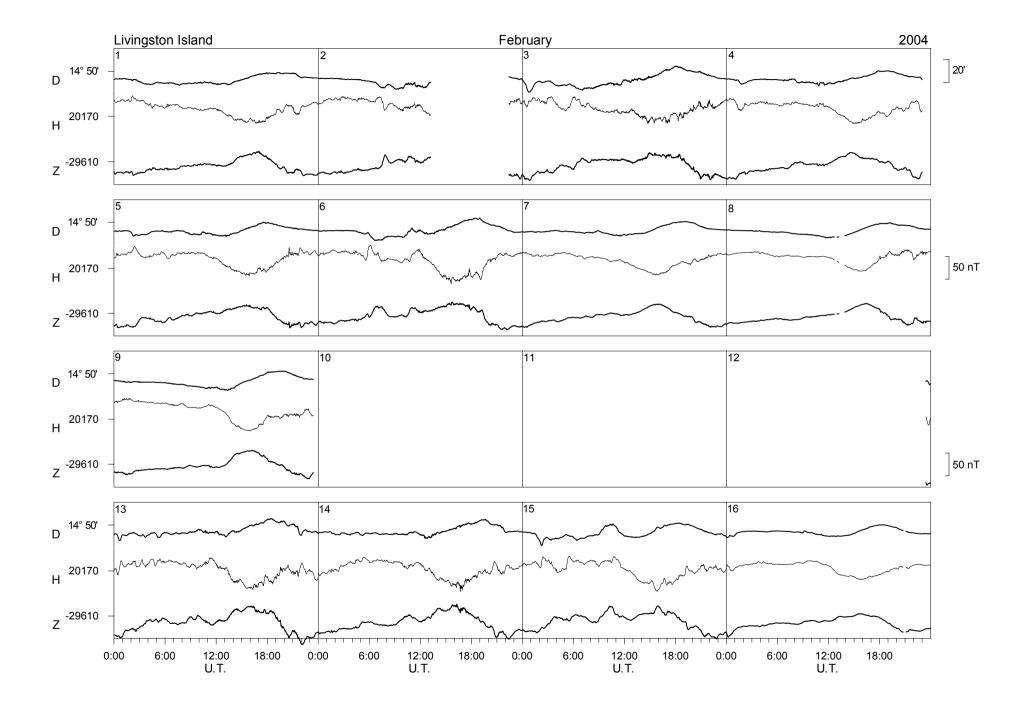
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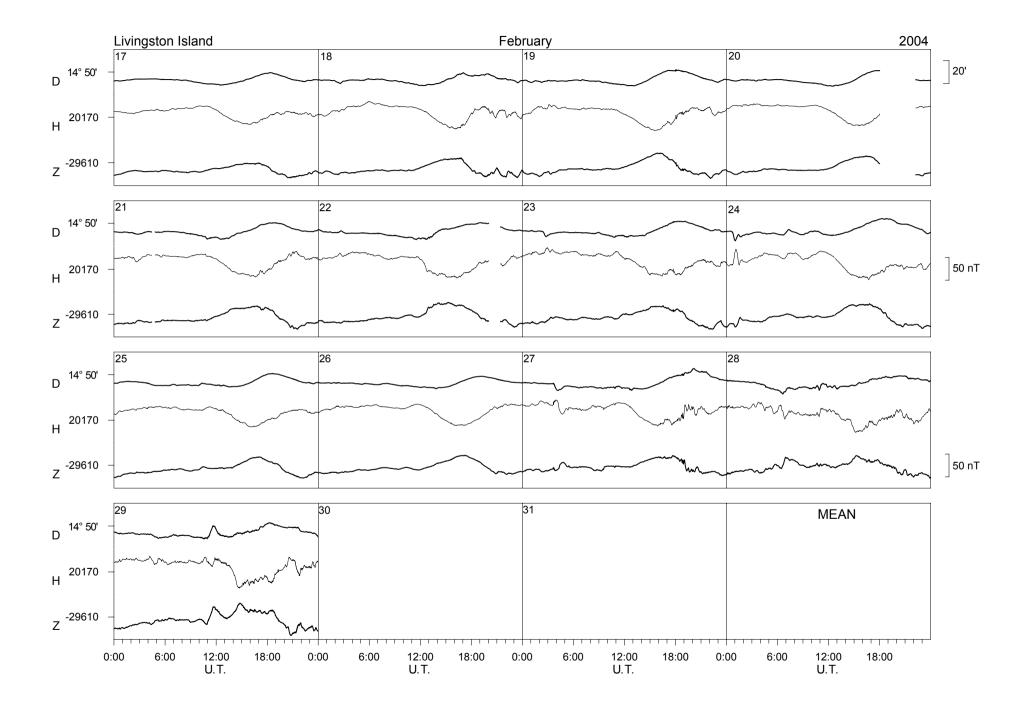
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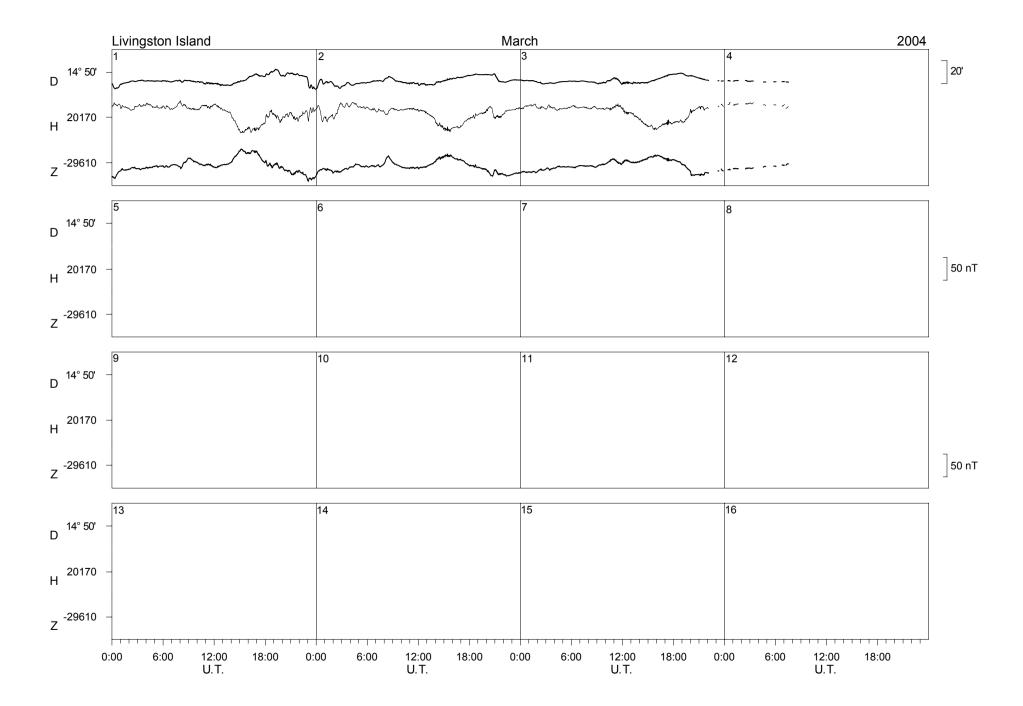
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| 2 | 3312 | 3343 | 22 | 2234 | | 25 | D4332 | 2233 | 22 | D3433 | 0 | - 29 | 4101 | 1123 | 9 17 | 3322 | 2223 | 19 | 1 3111 | 1223 - |
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| 6 | 2222 | 22 | _ | 2224 | 2222 | 22 | 0 | | _ | DE 444 | 2124 | 20 | 222_ | 1124 | _ | 1222 | 2121 | 10 | 02322 | 1000 10 |
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| 19 | 3222 | 3433 | 22 | 2211 | 1222 | 13 | 4212 | 2112 | 15 | 4321 | 1011 | 13 | 1201 | 1221 | 10 | 2222 | 1000 | 9 | 1322 | 1 |
| 20 | 3323 | 2223 | 20 | Q1111 | 14 | - | 3422 | 2222 | 19 | Q2112 | 0011 | 8 | D1134 | 1123 | 16 | Q0010 | 0100 | 2 | | 2 - |
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| 7 | | | | 22 | | | ^ | | - | Q | | - | D | | | | | | D3333 | 11EC 21 |
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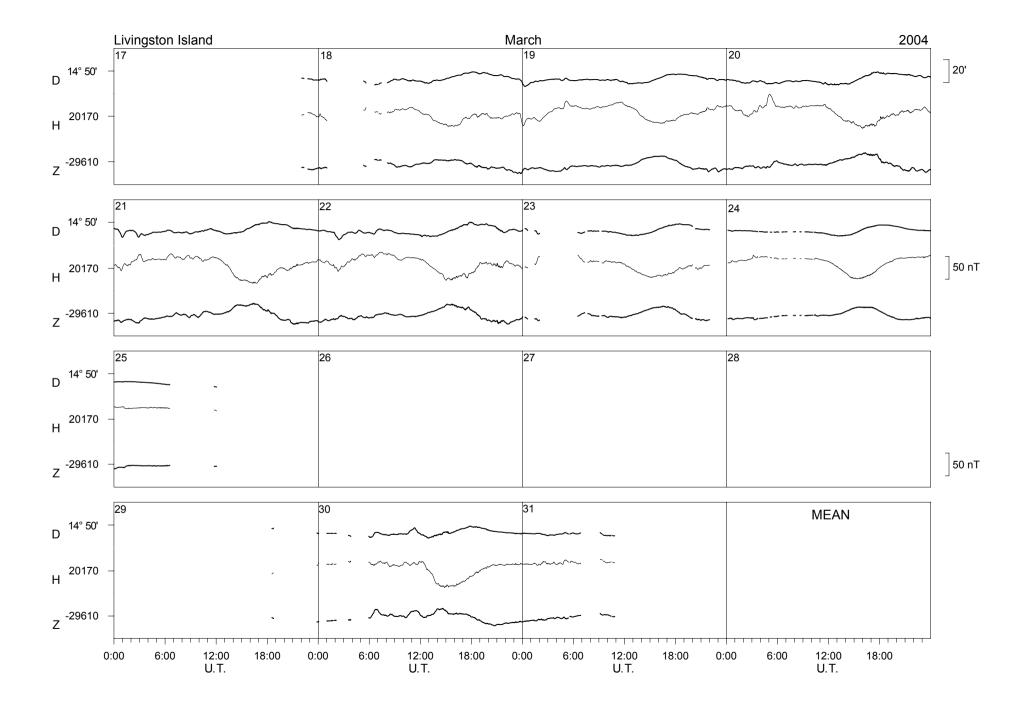


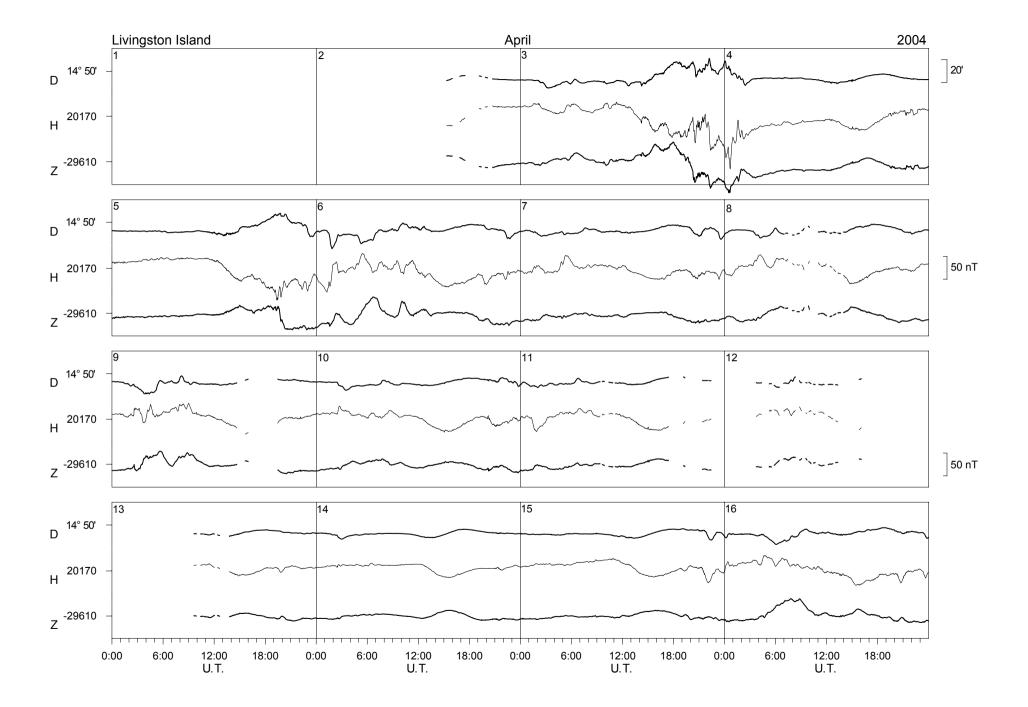


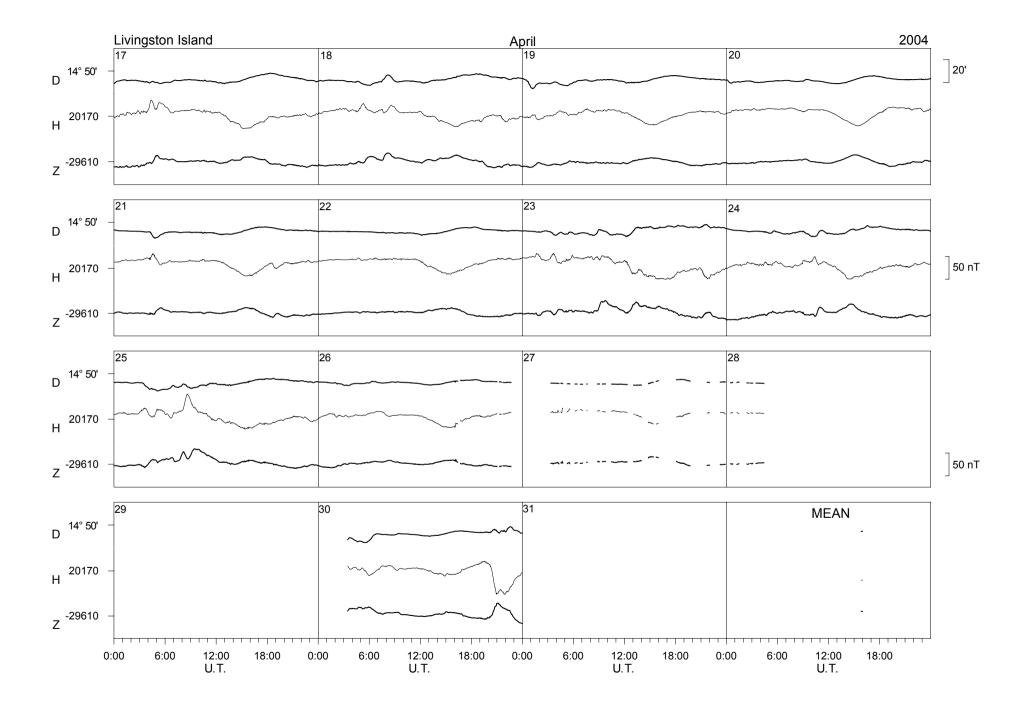


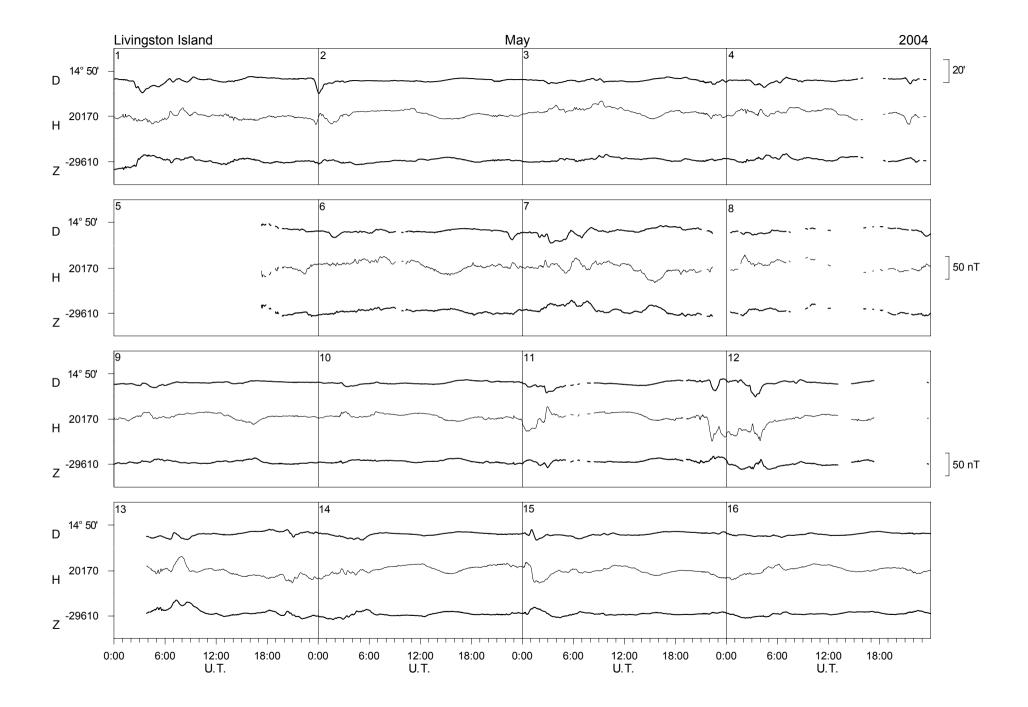


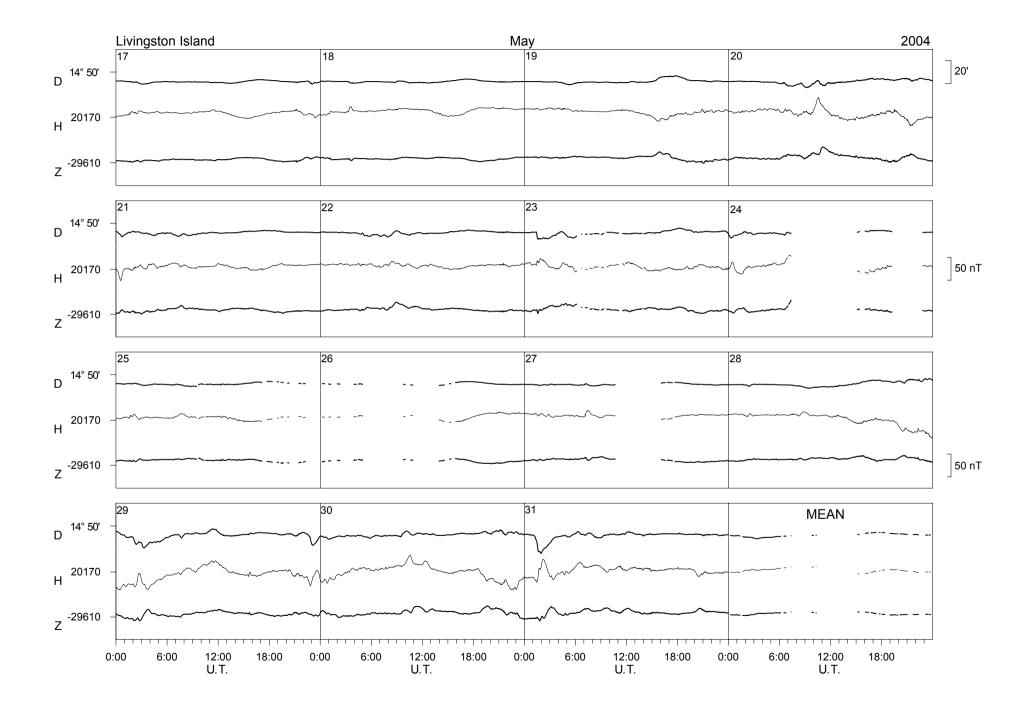


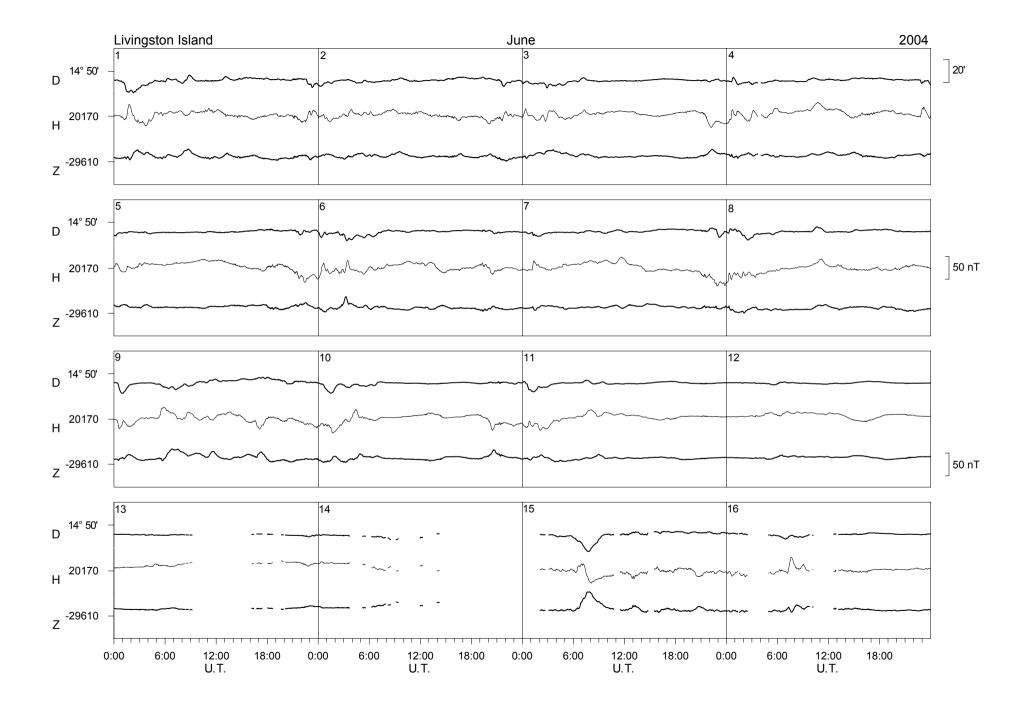


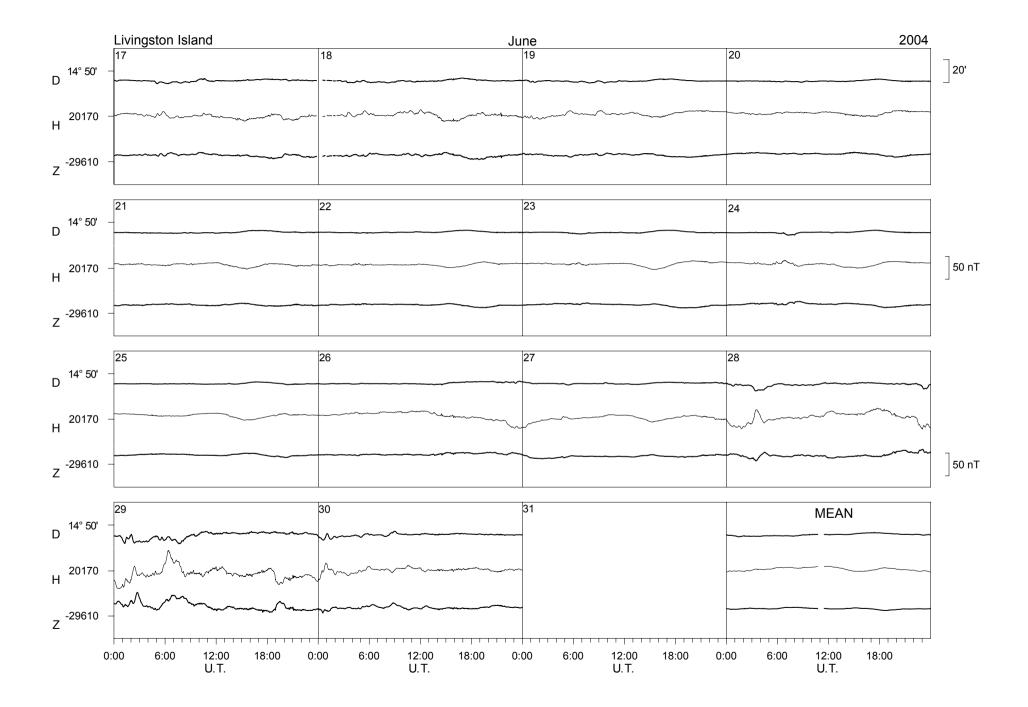


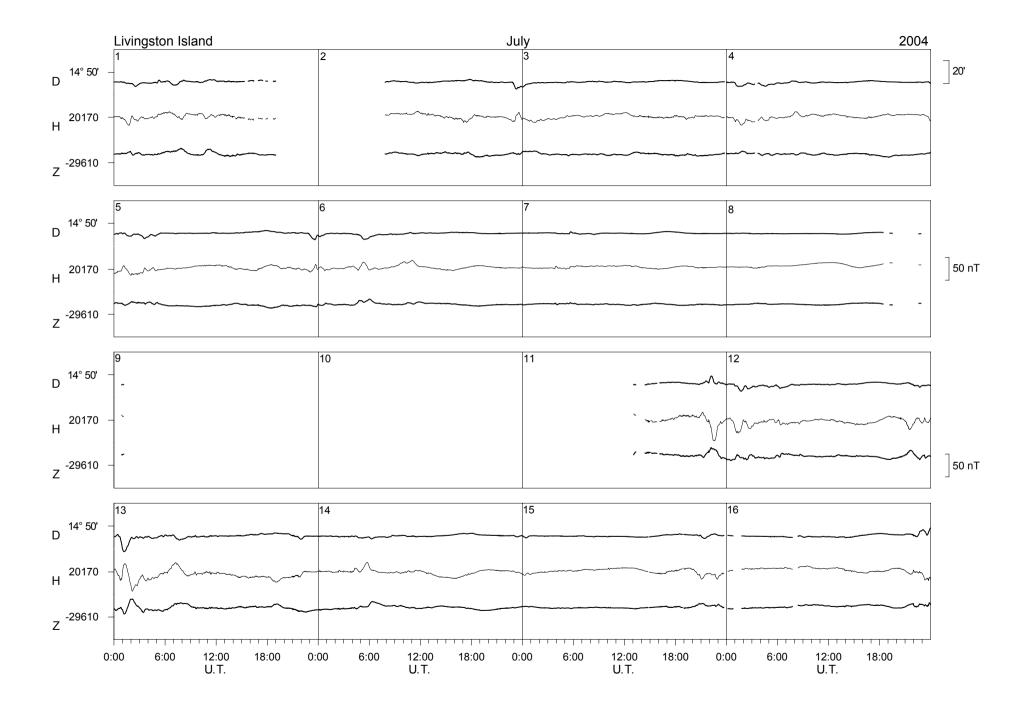


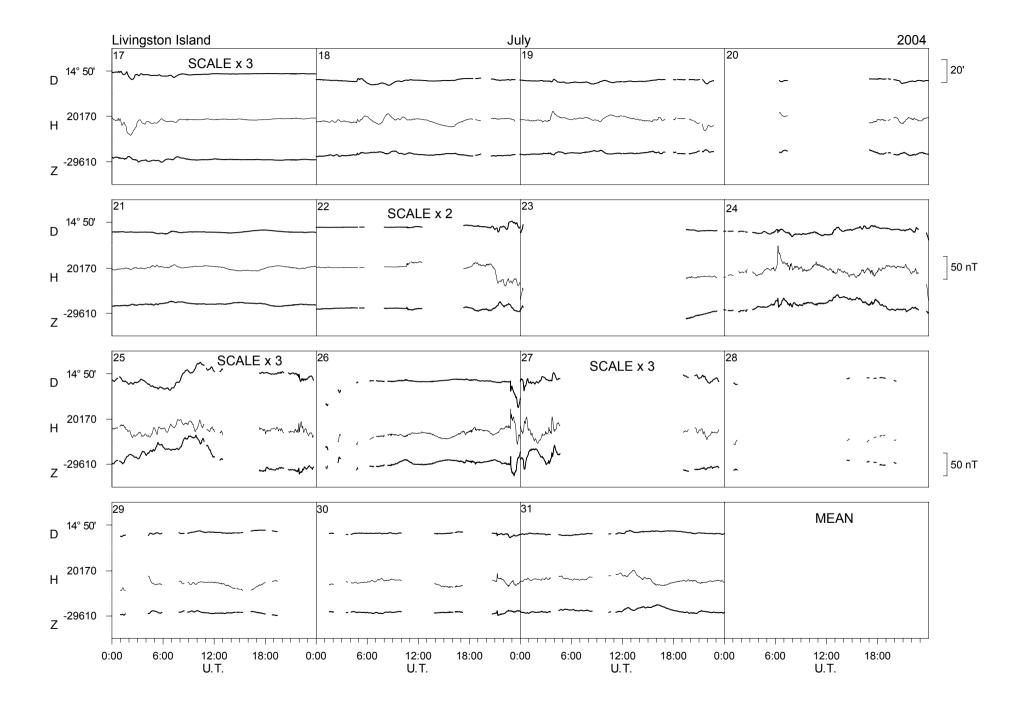


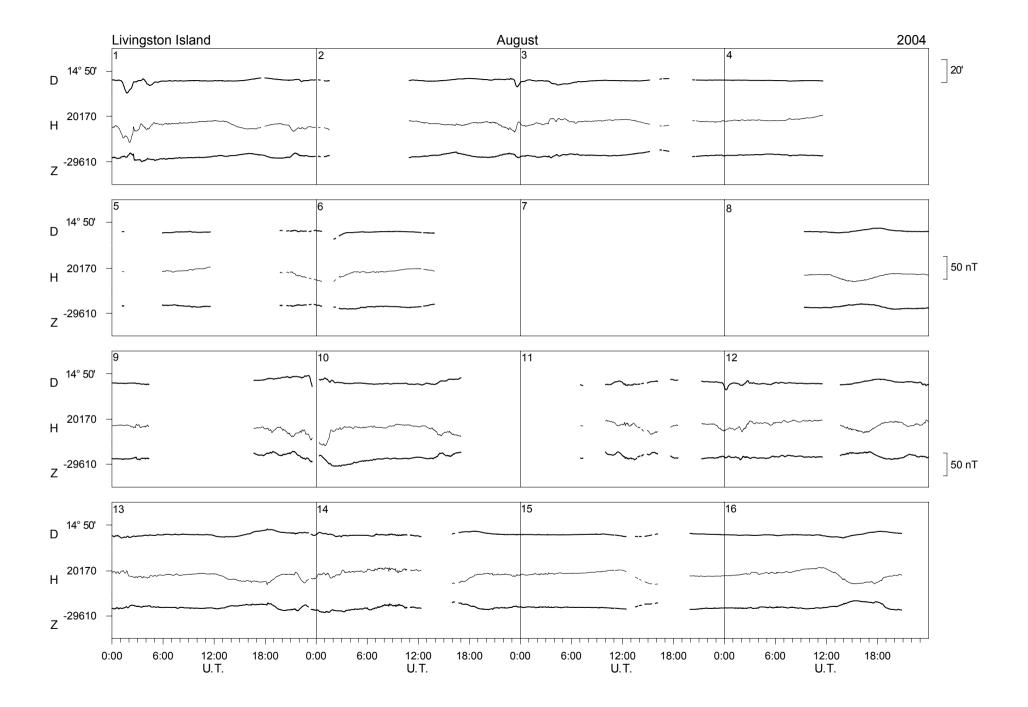


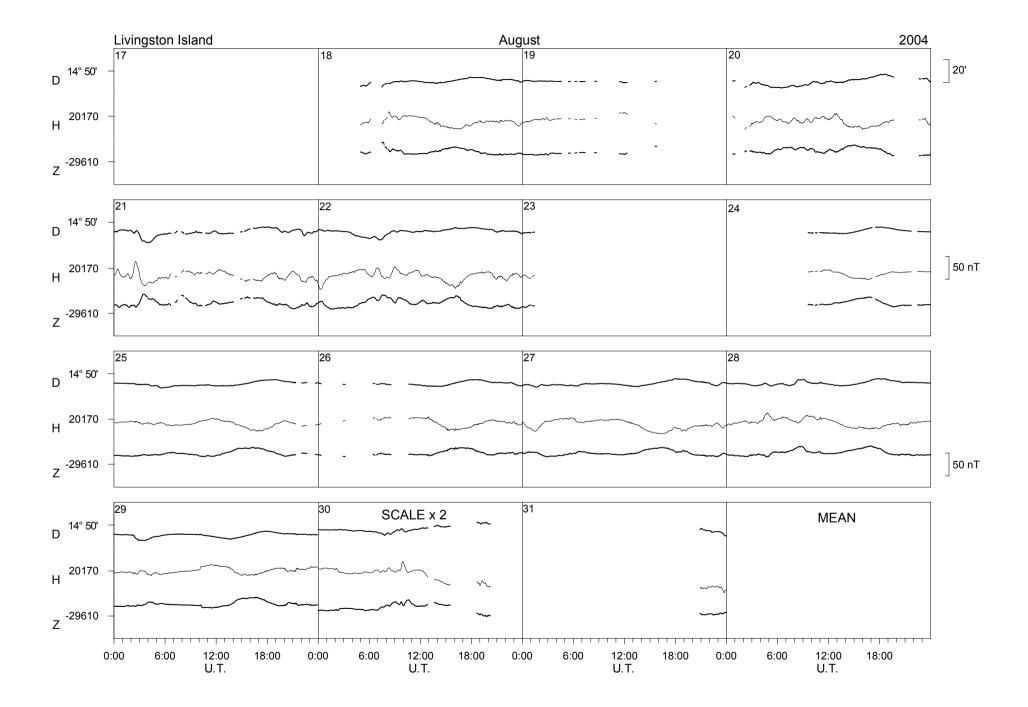


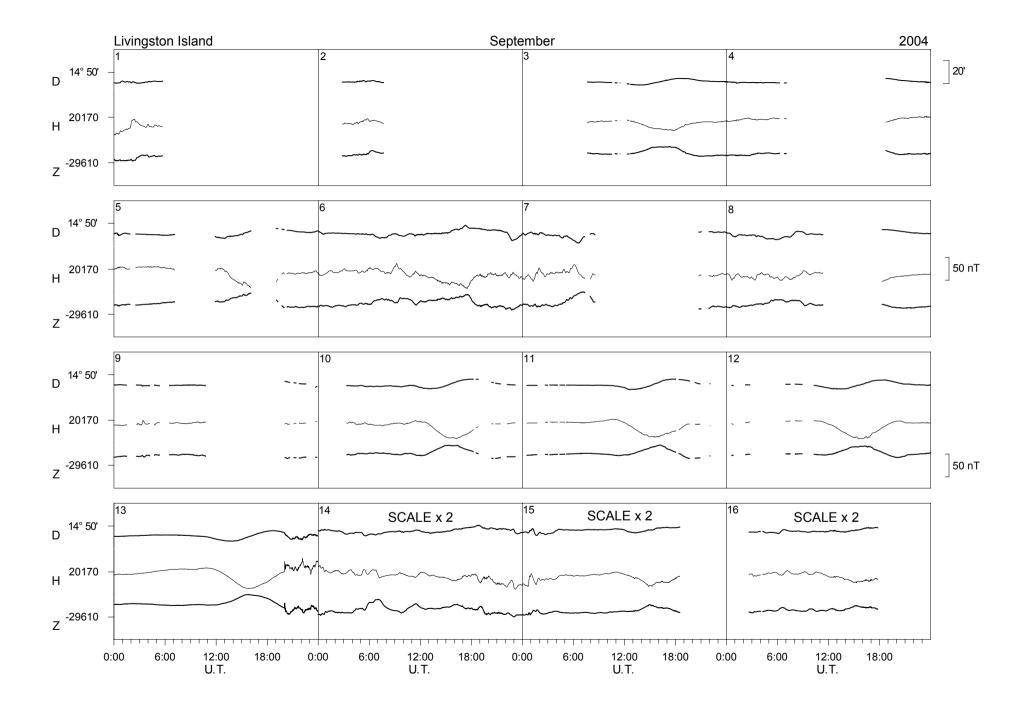


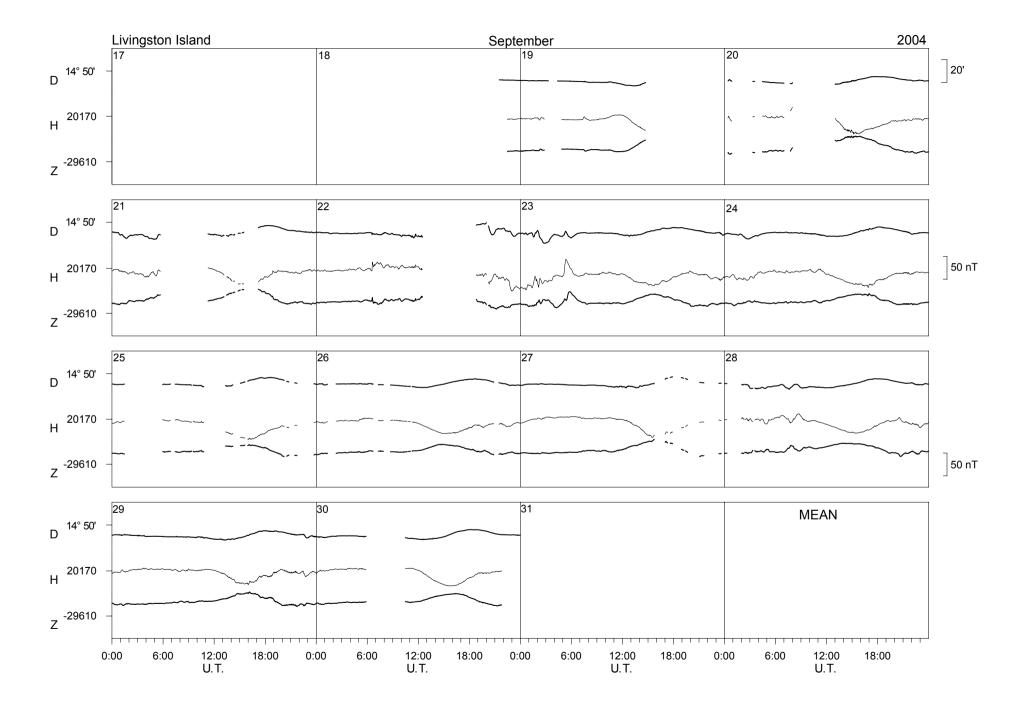


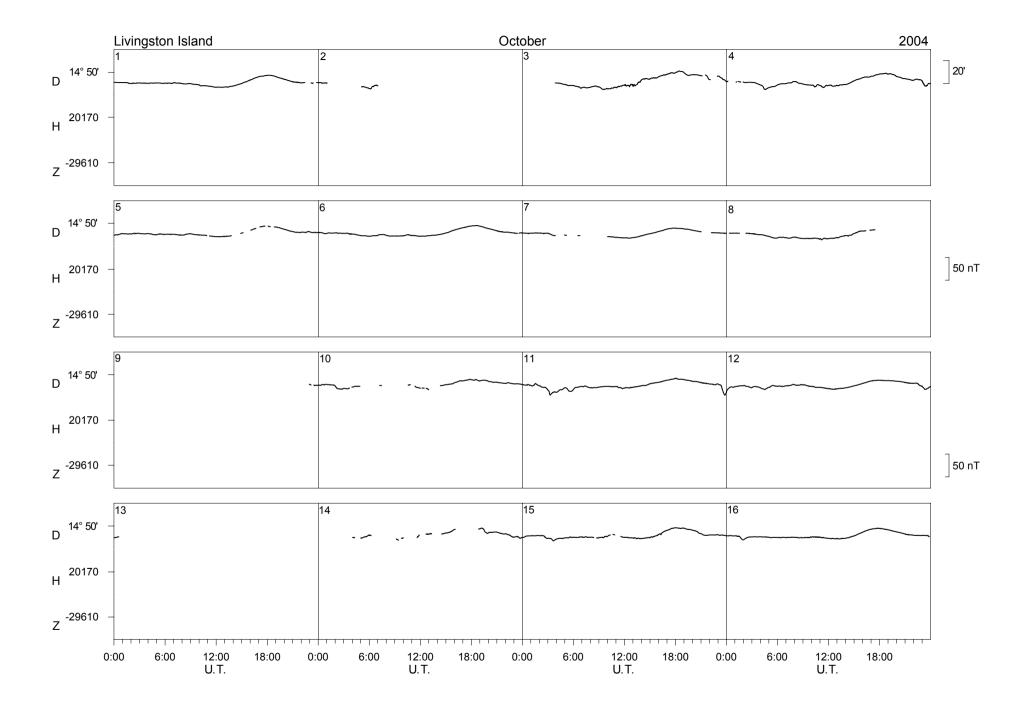


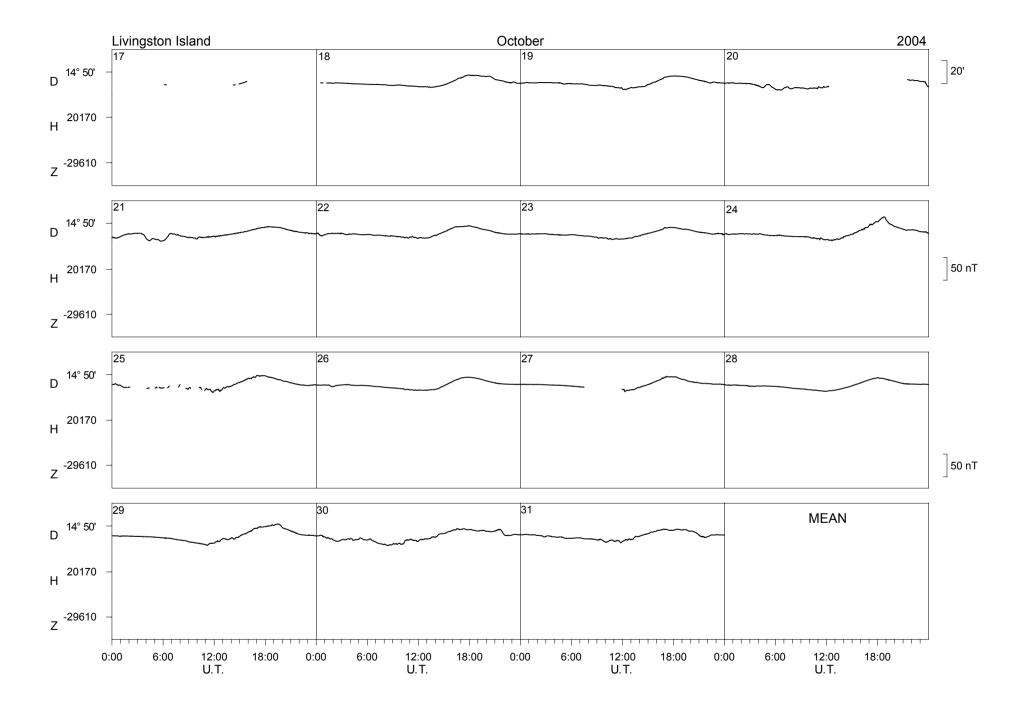


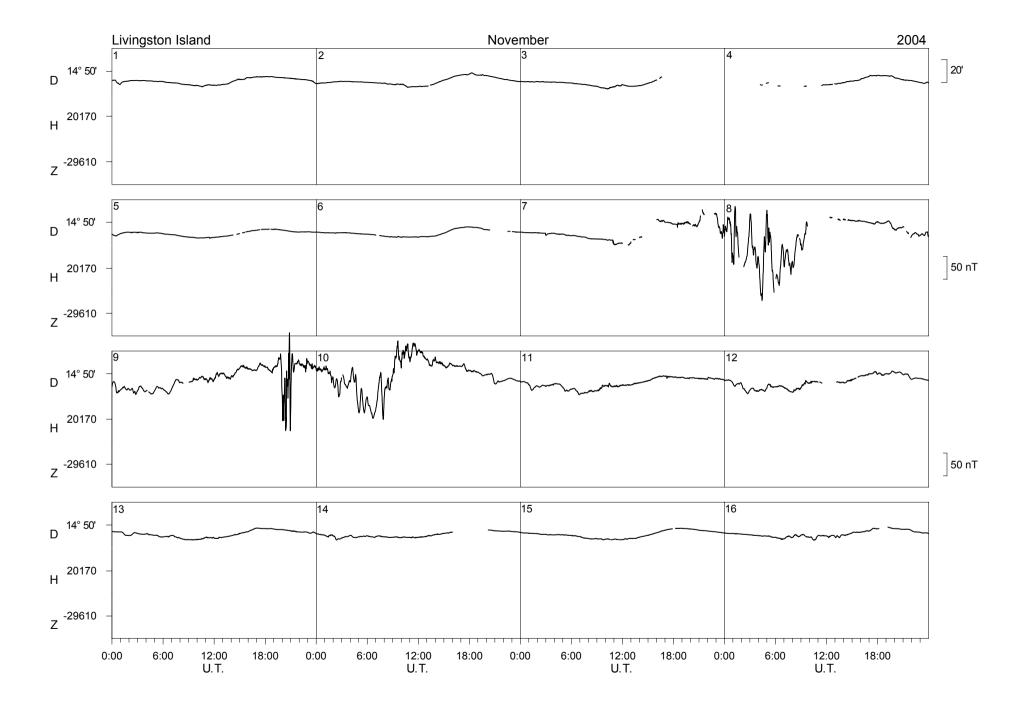


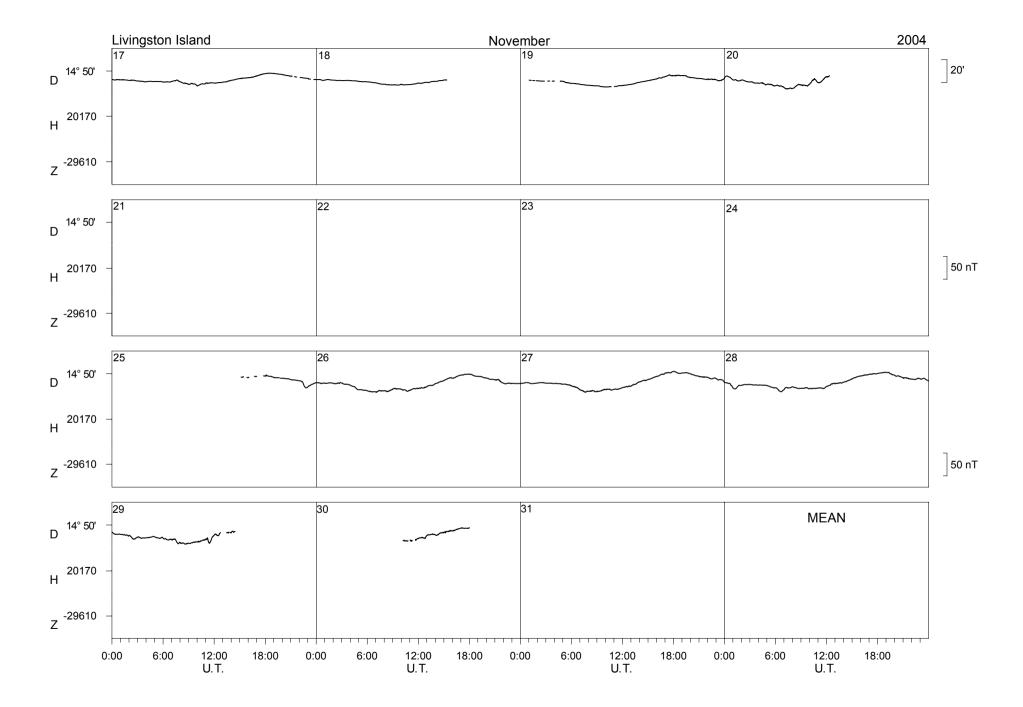


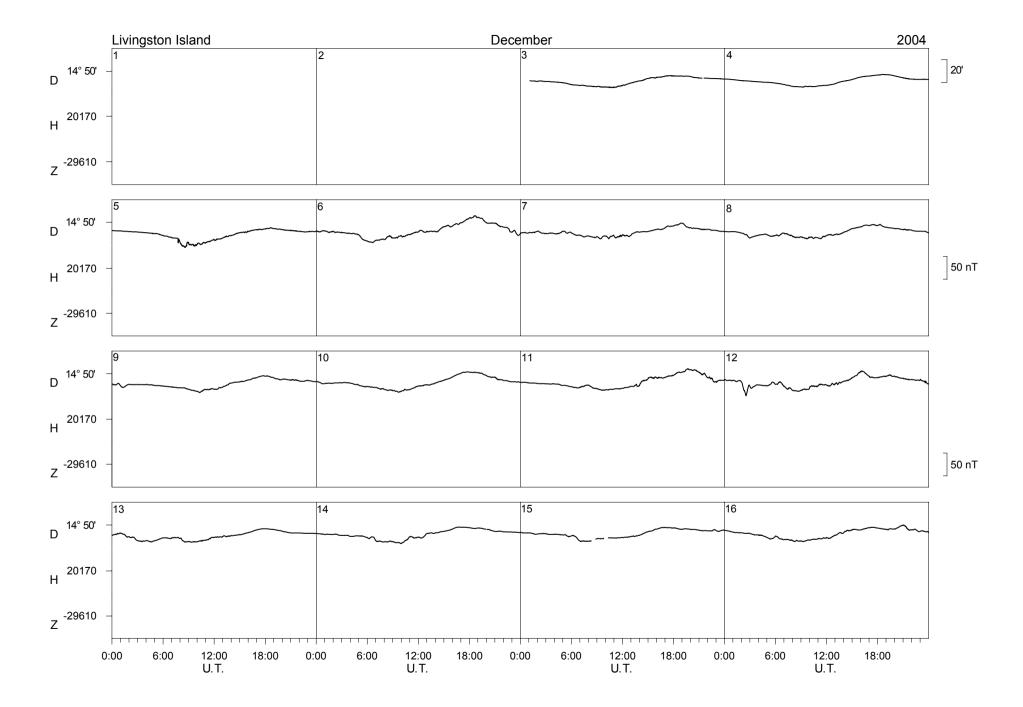


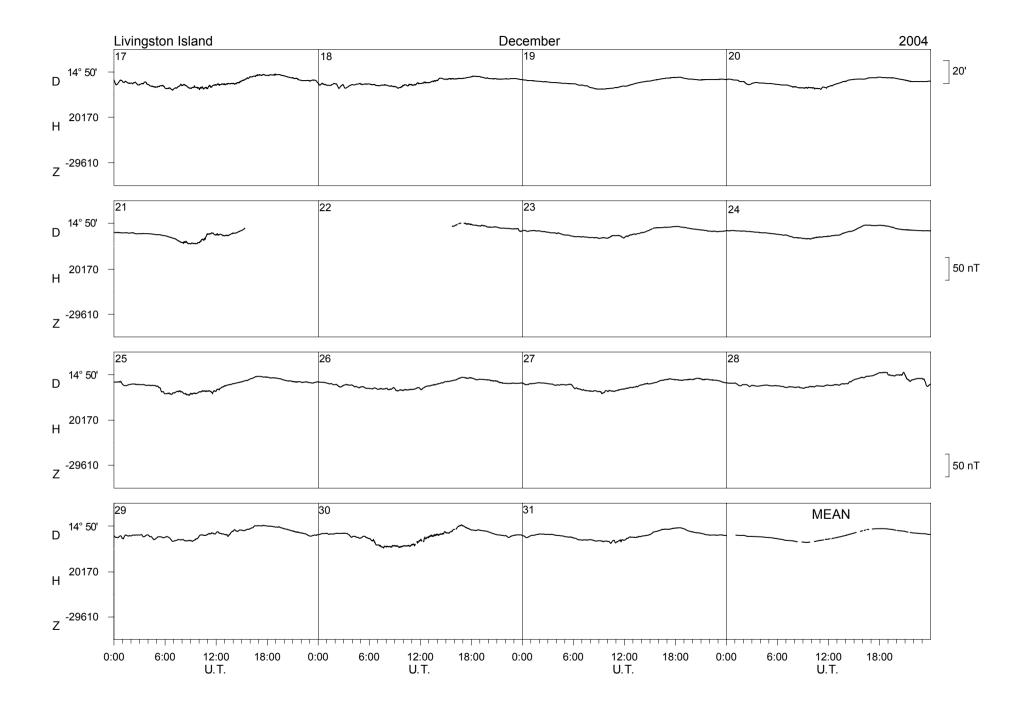


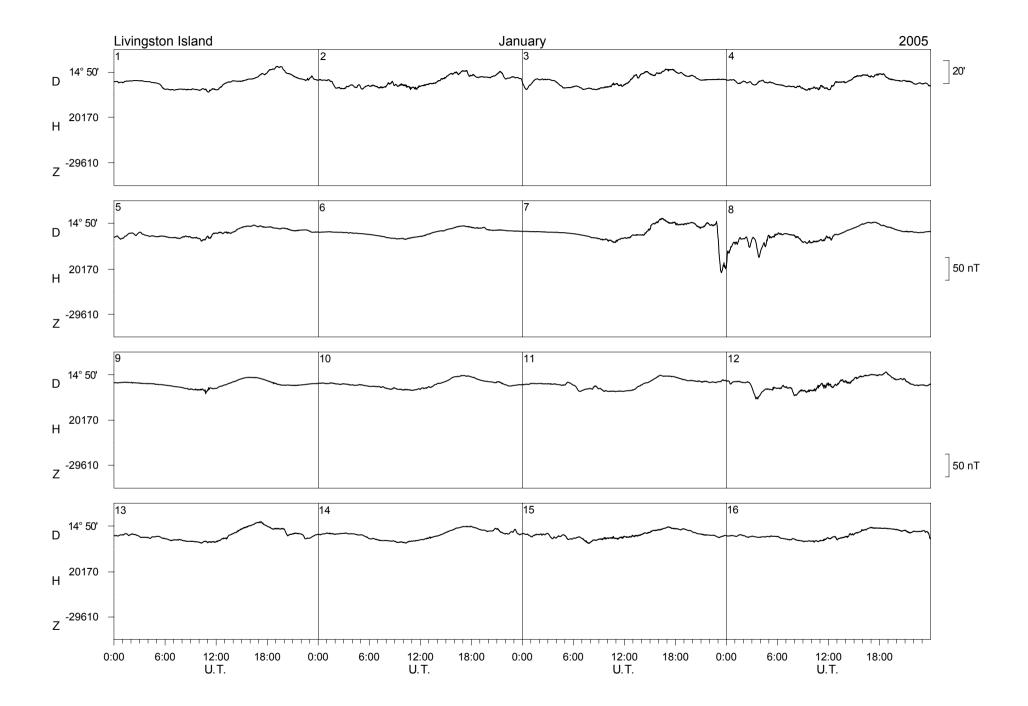


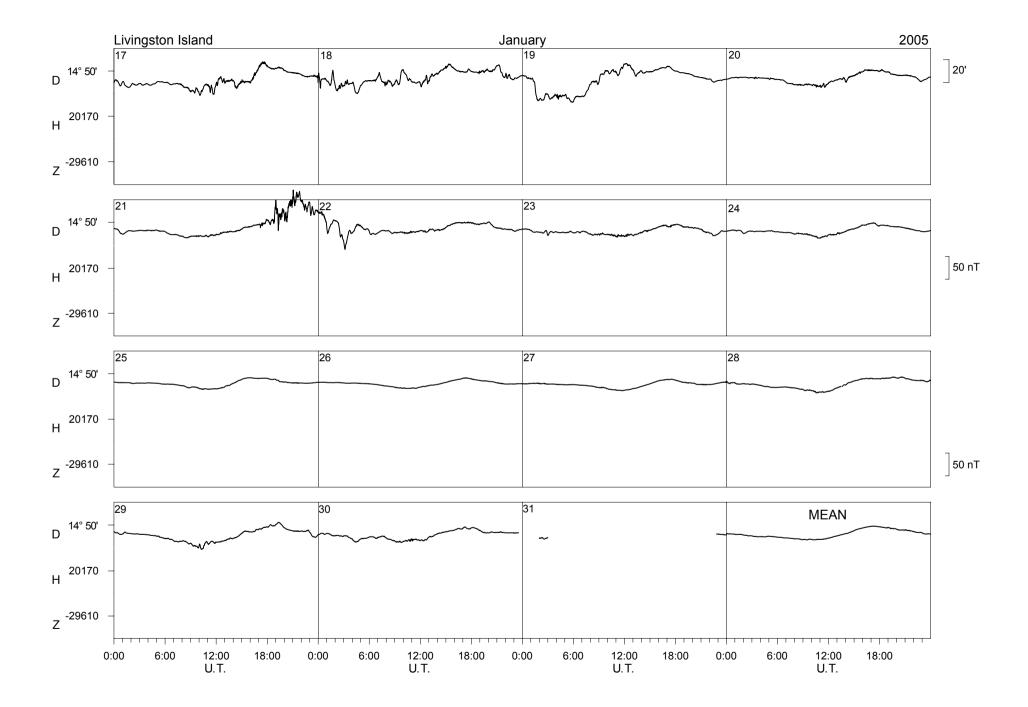


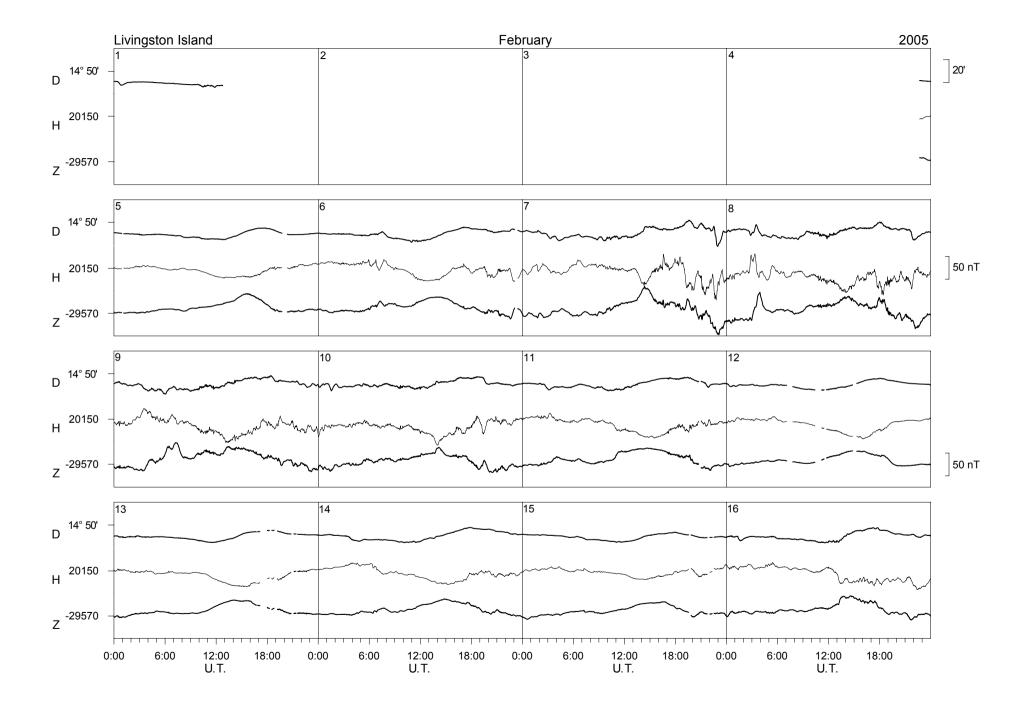


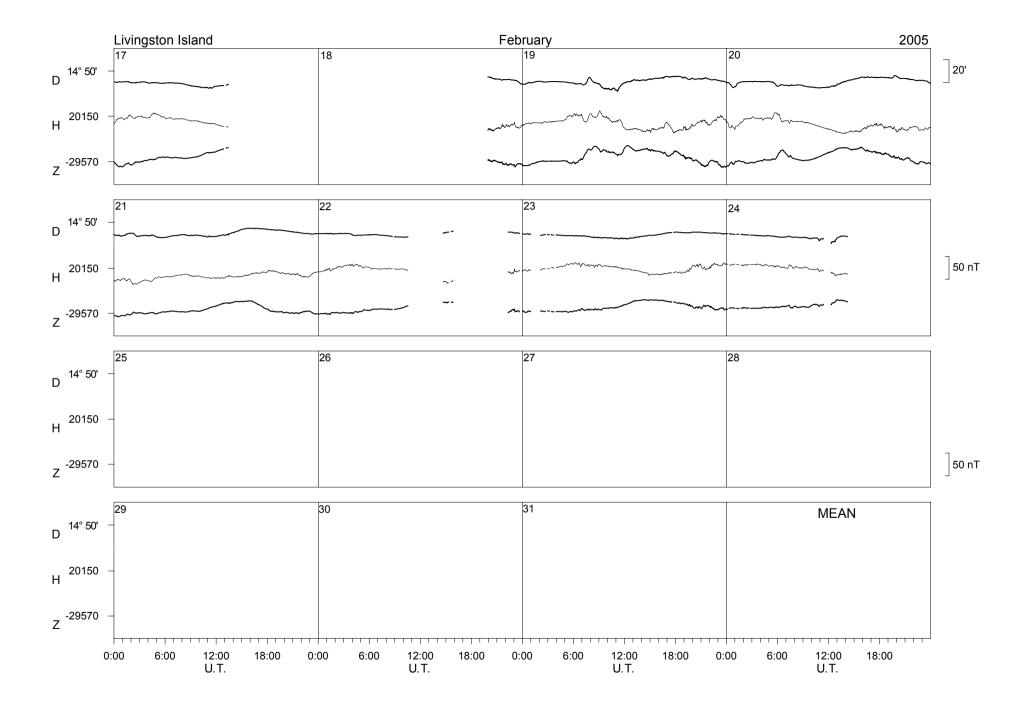


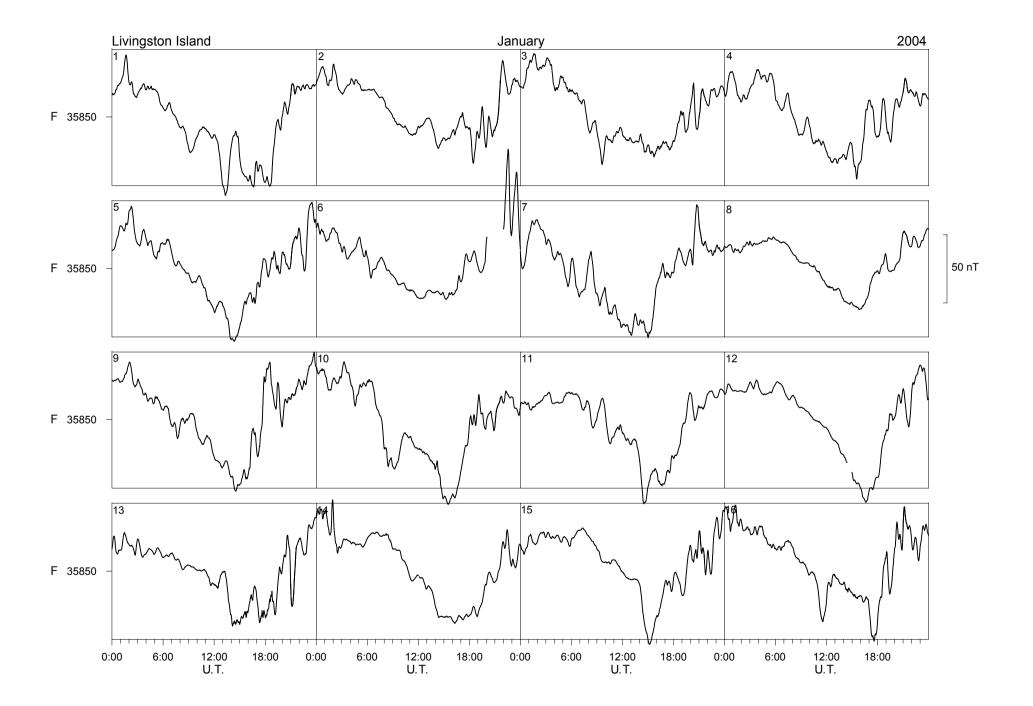


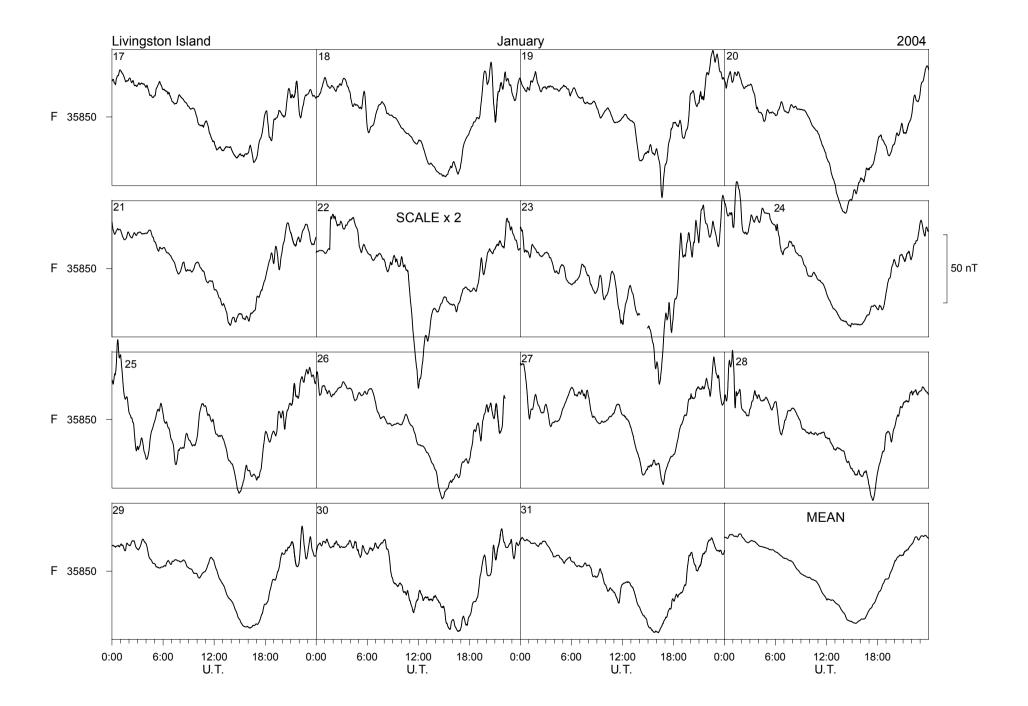


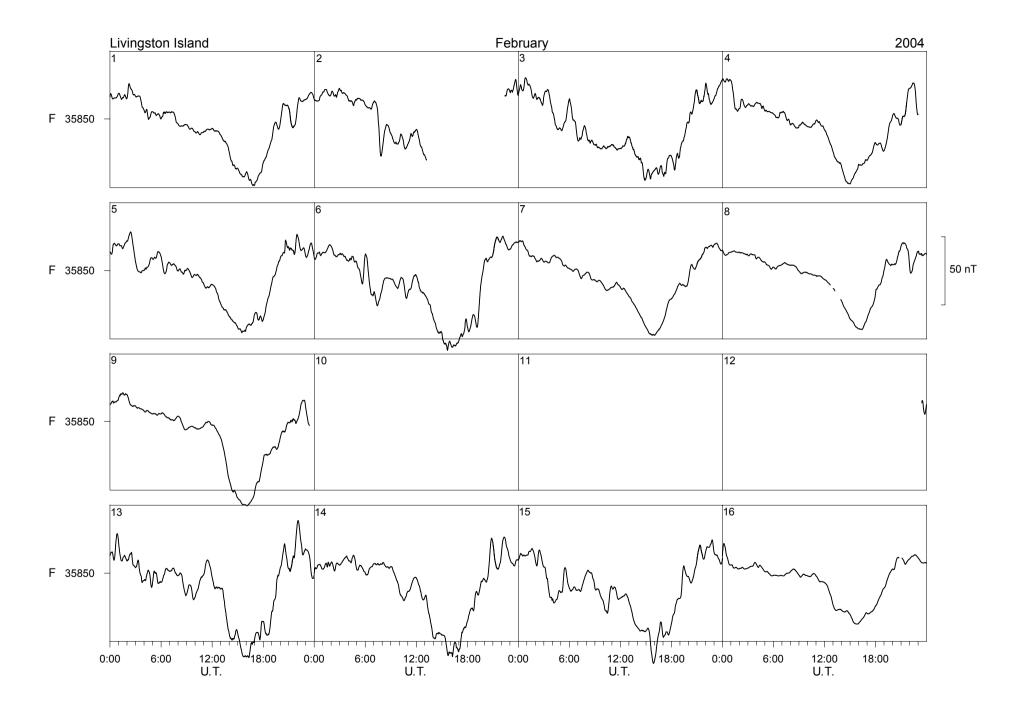


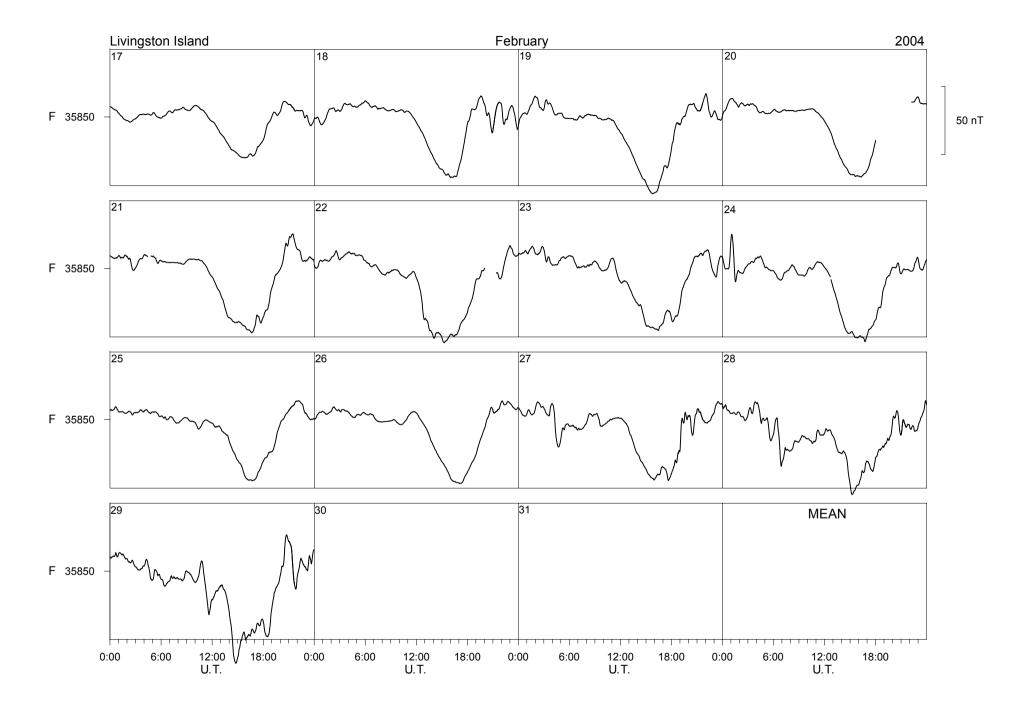


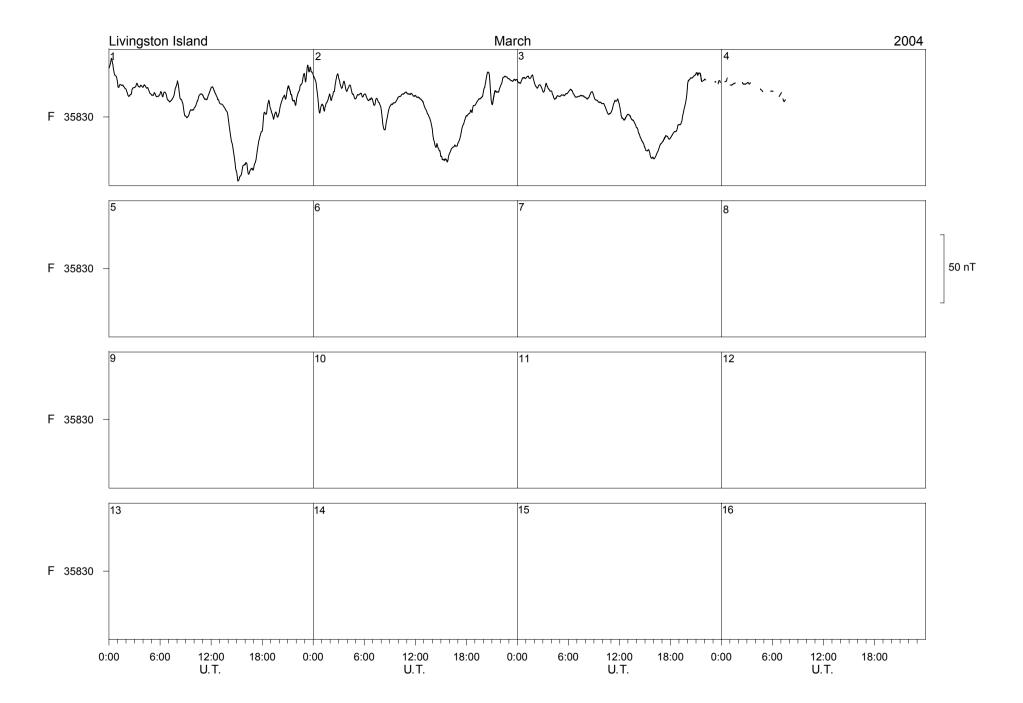


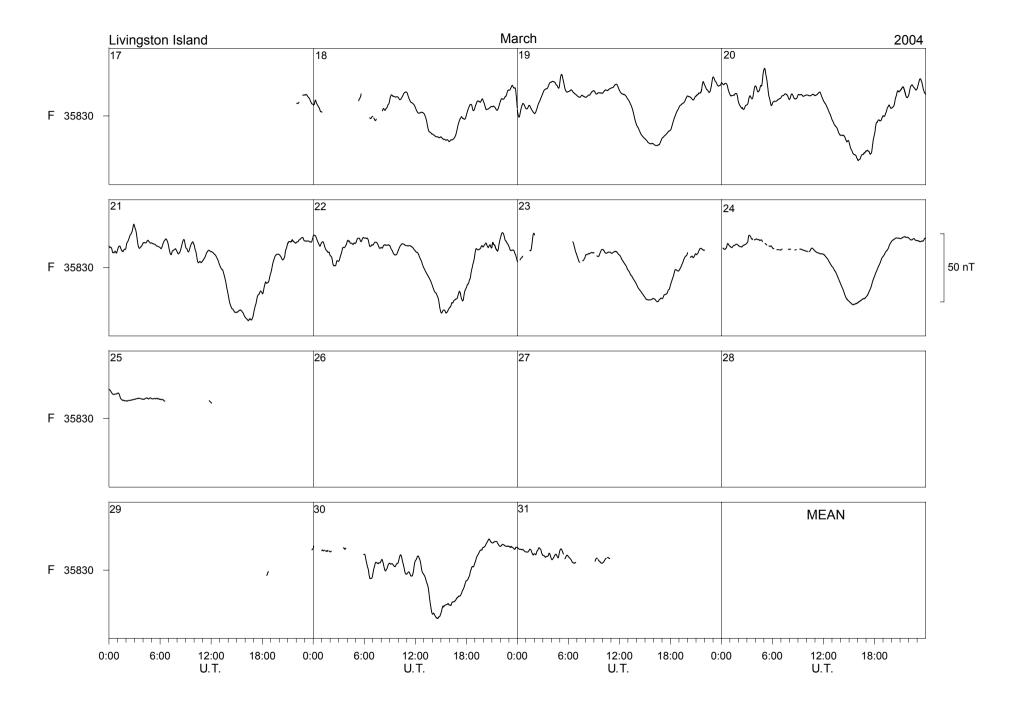


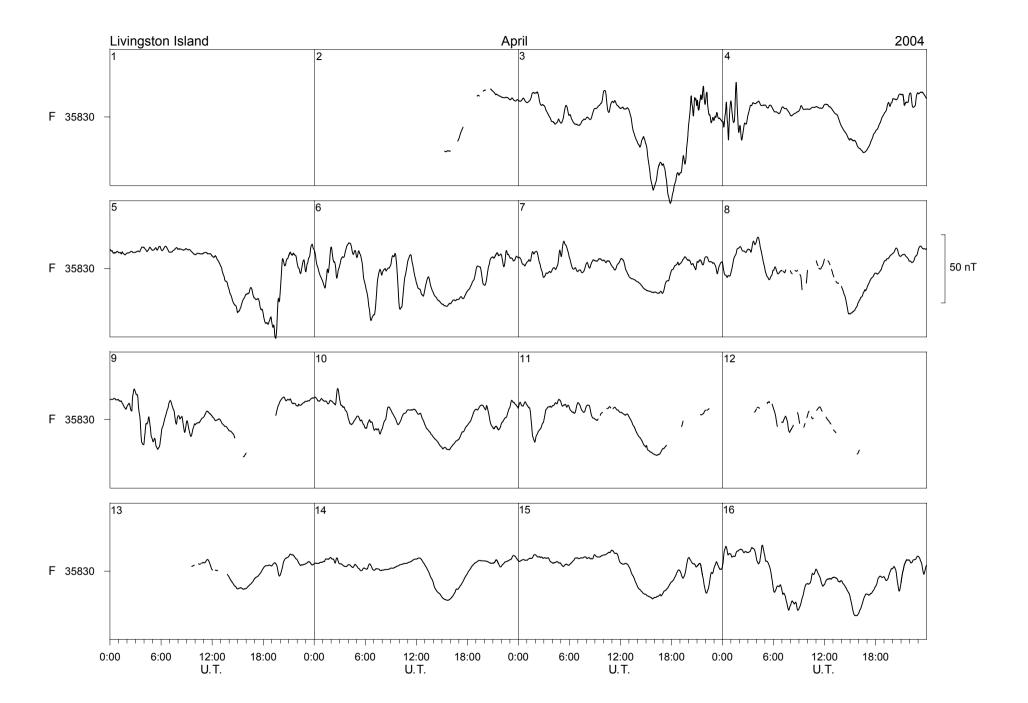


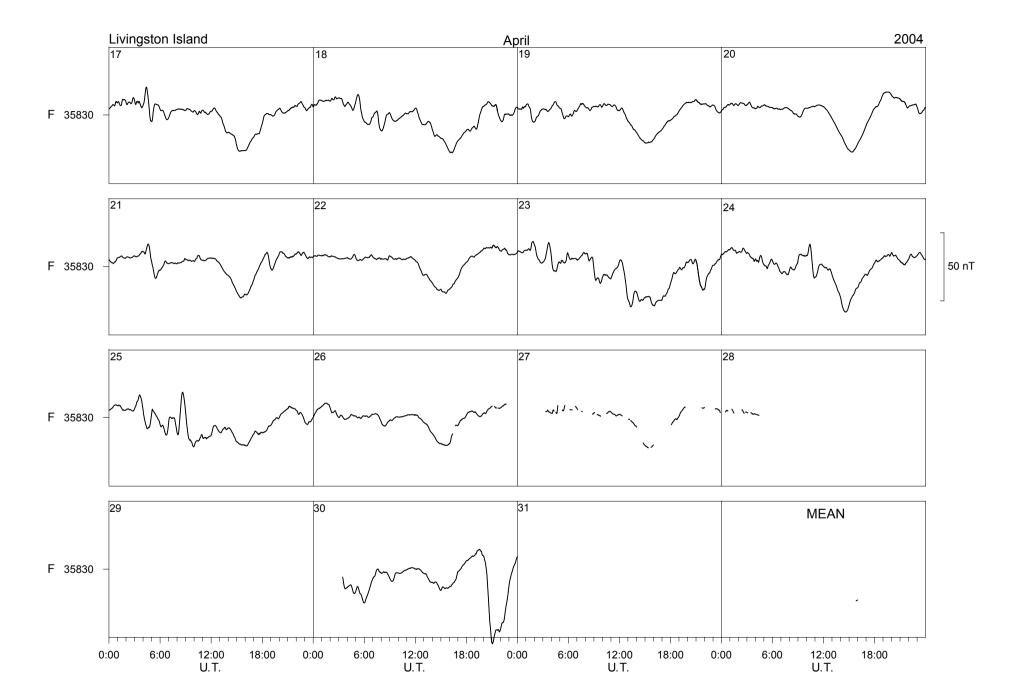


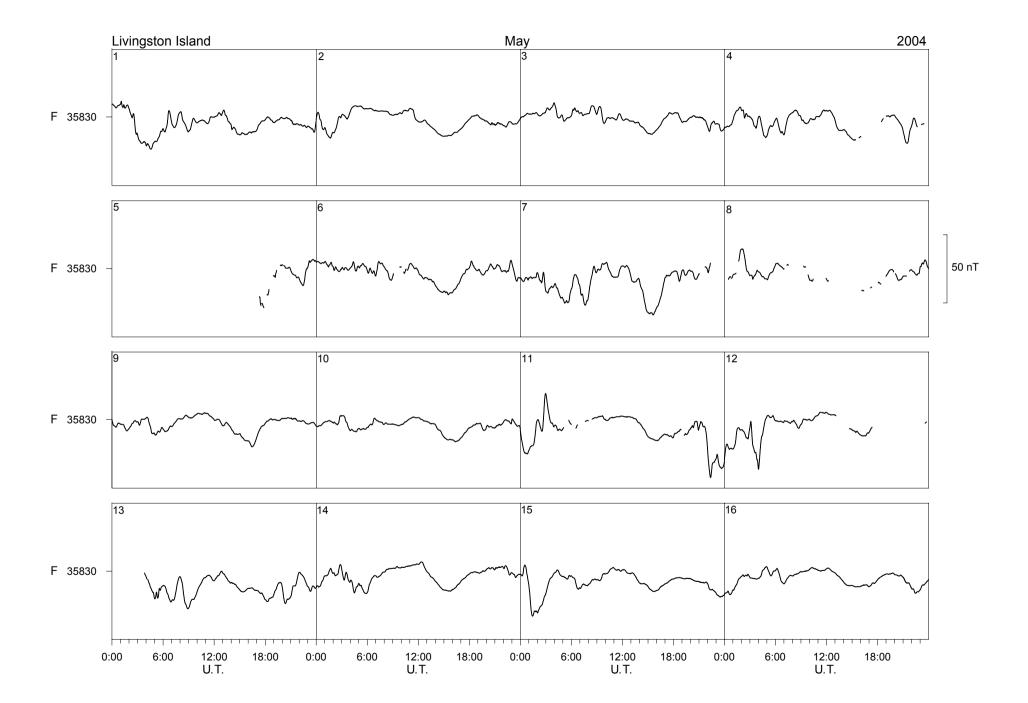


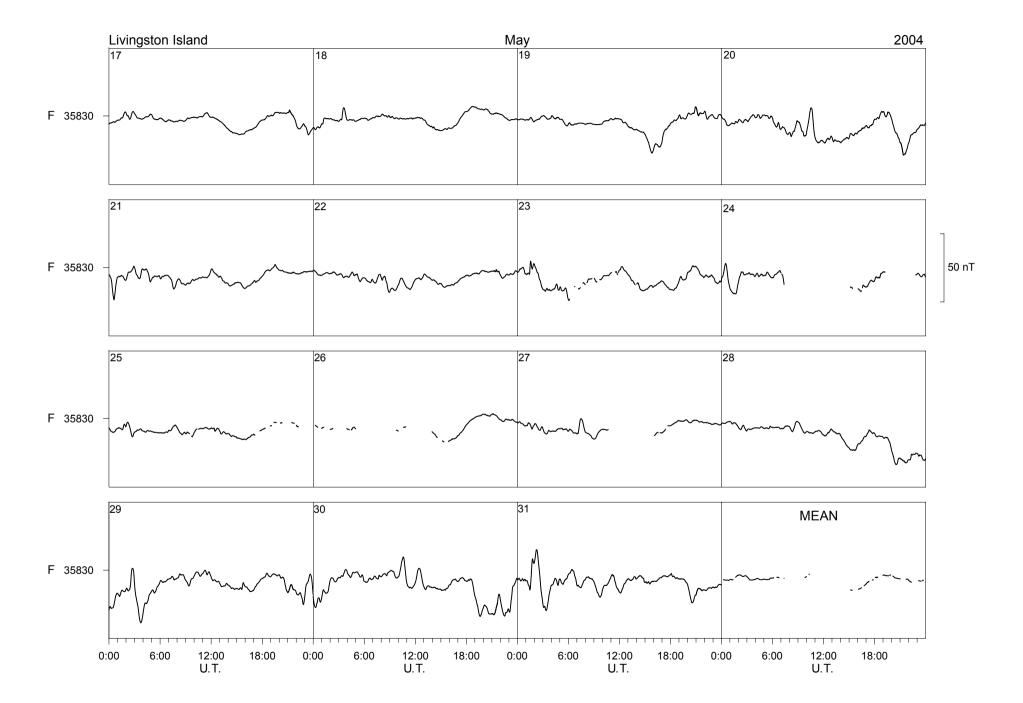


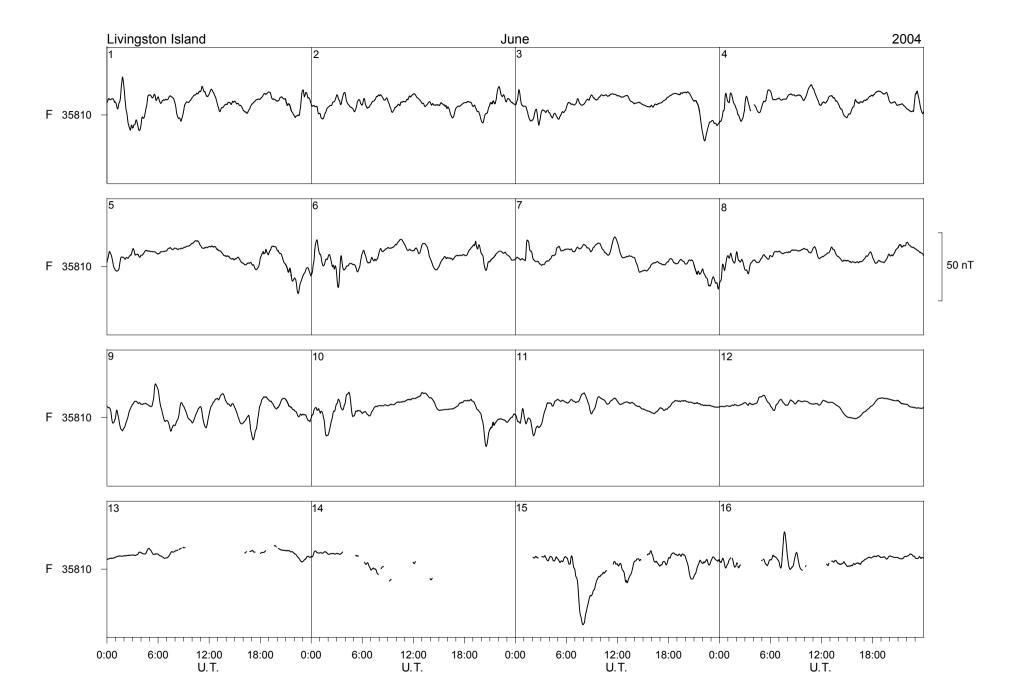


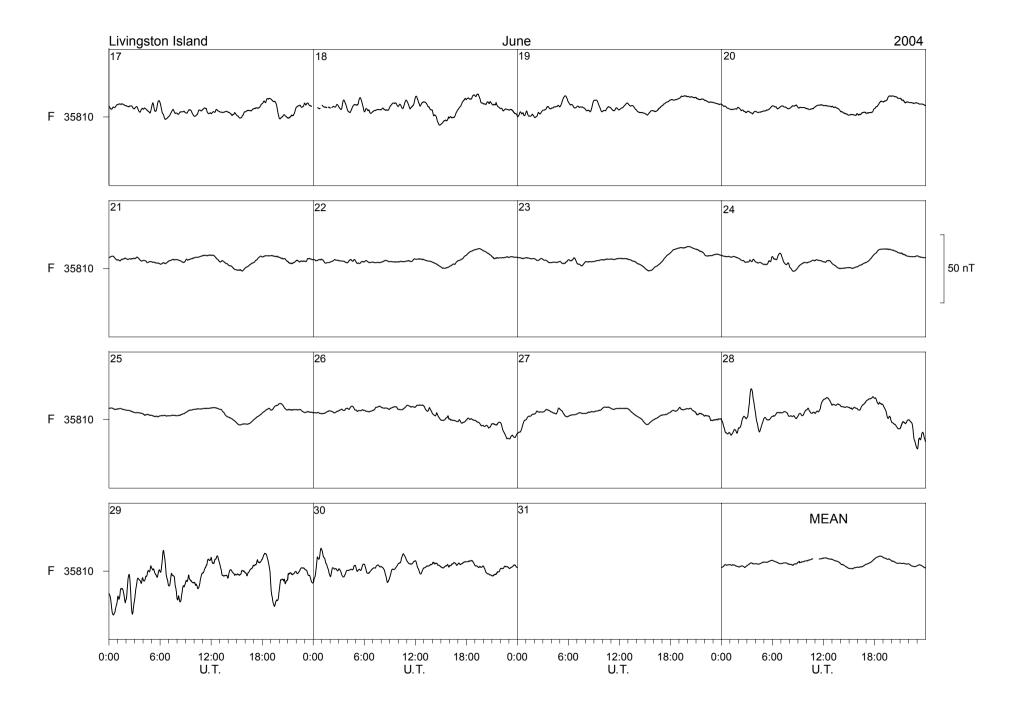


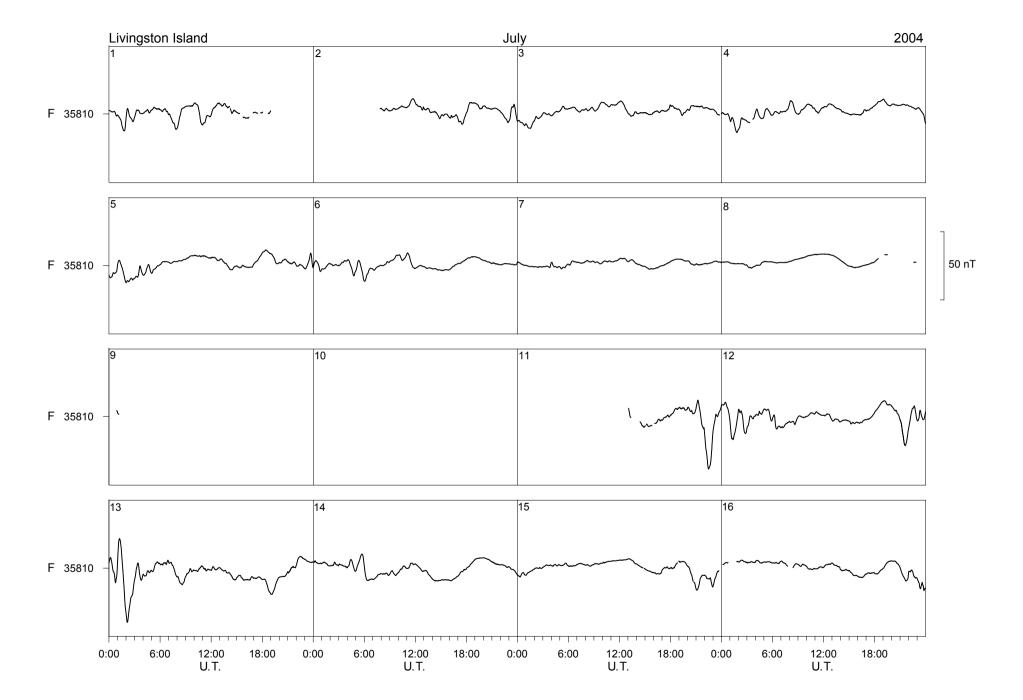


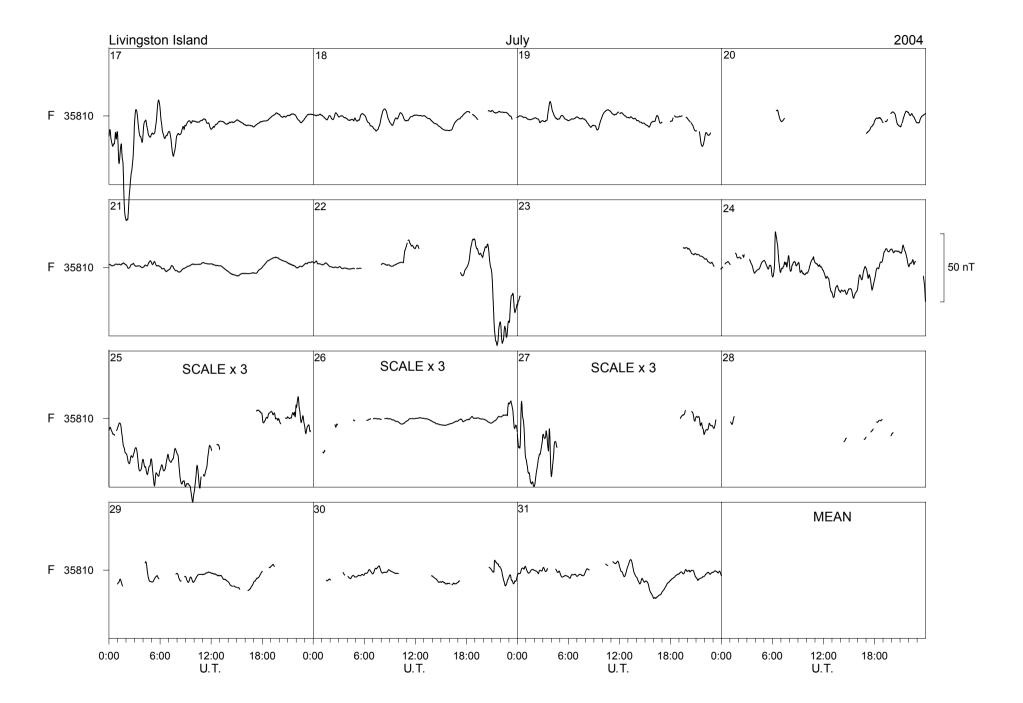


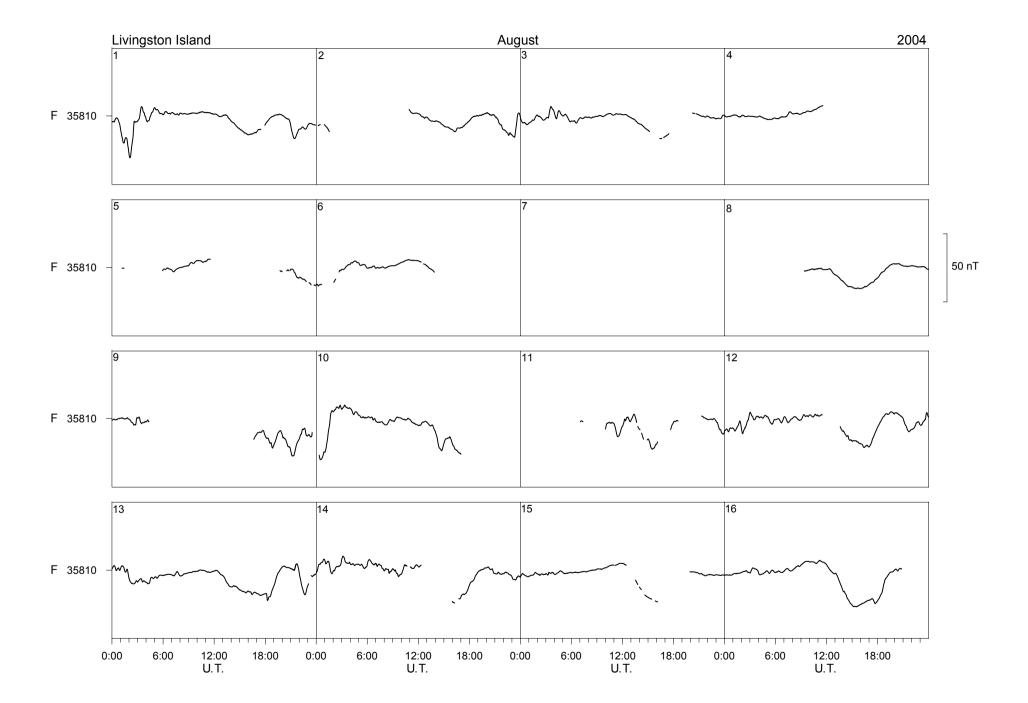


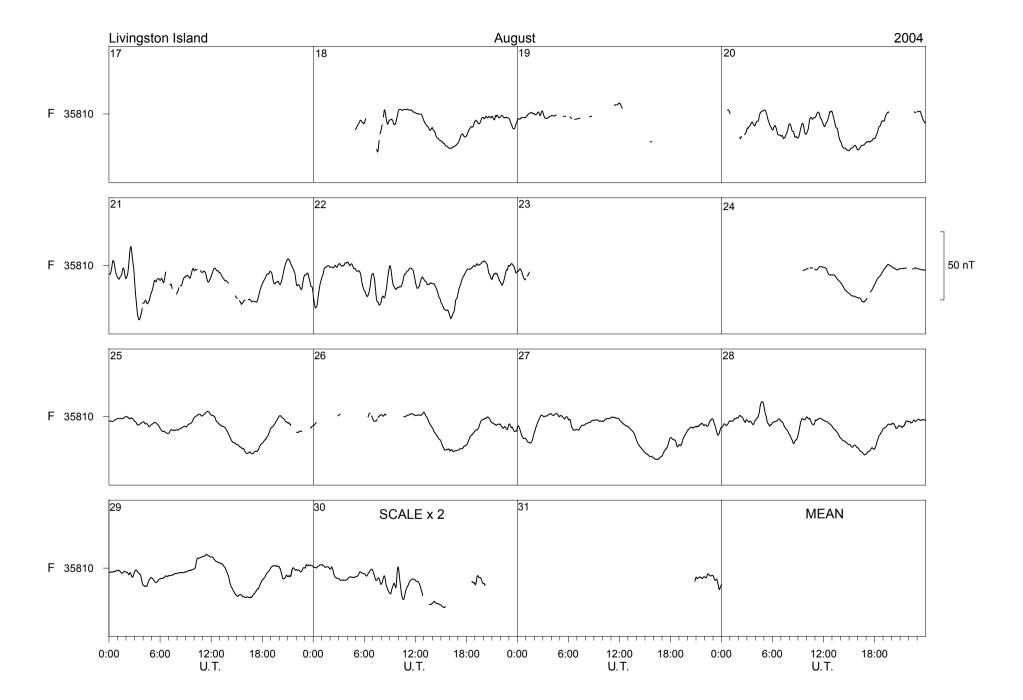


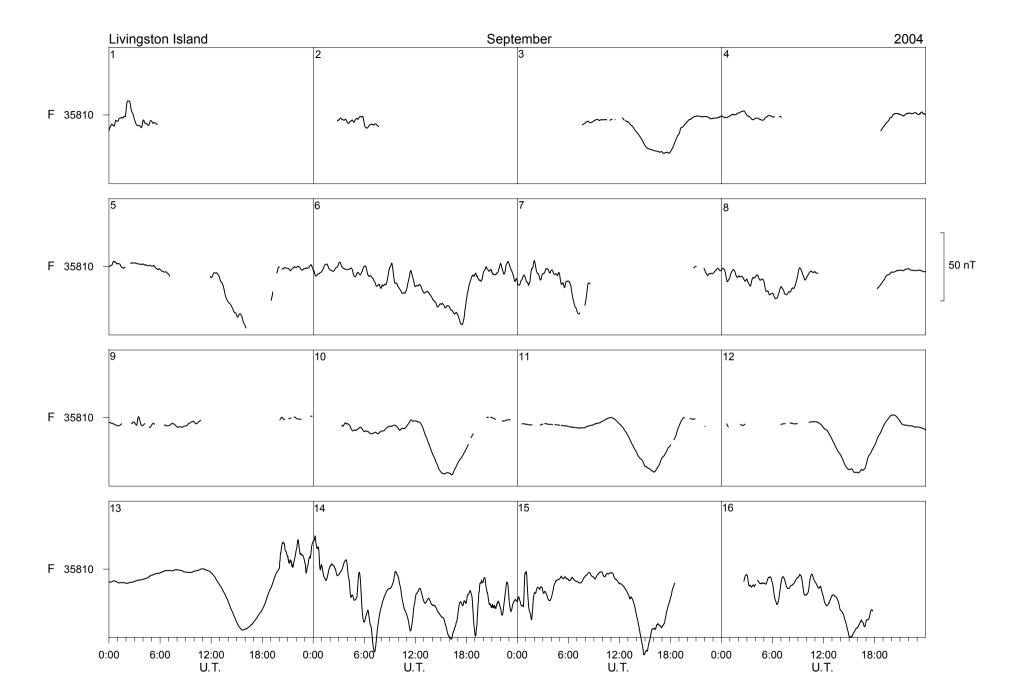


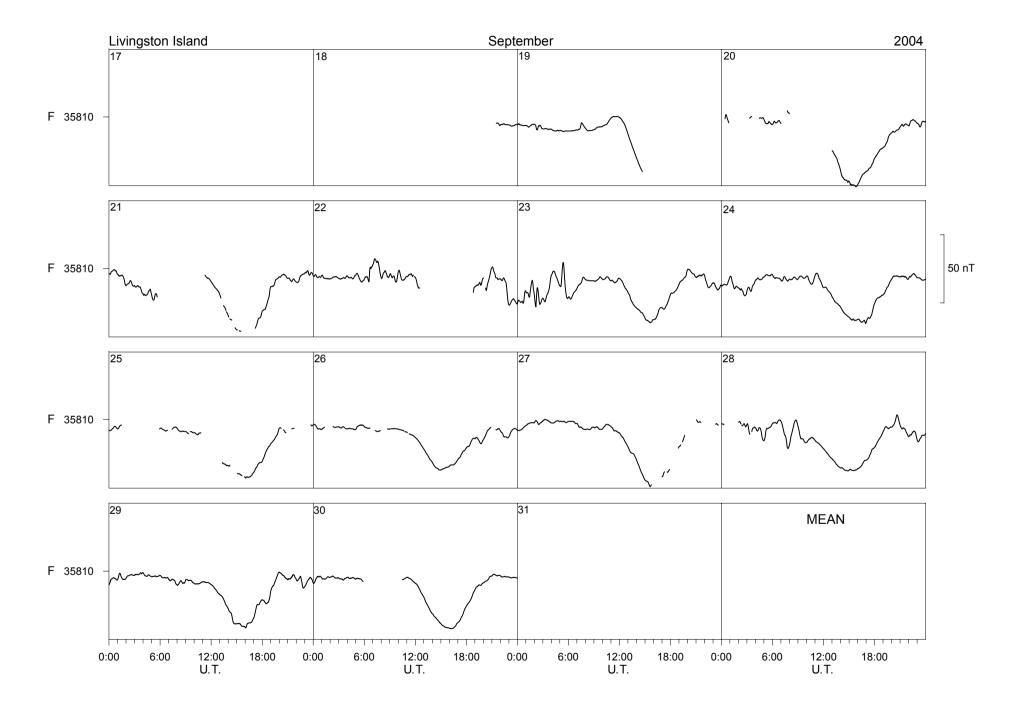


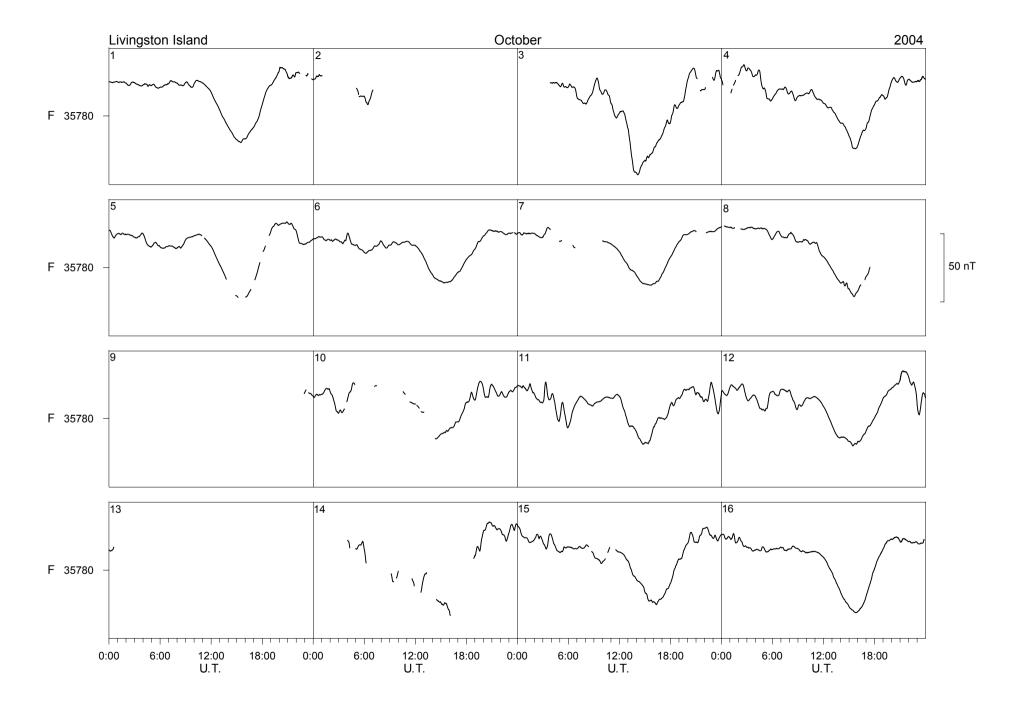


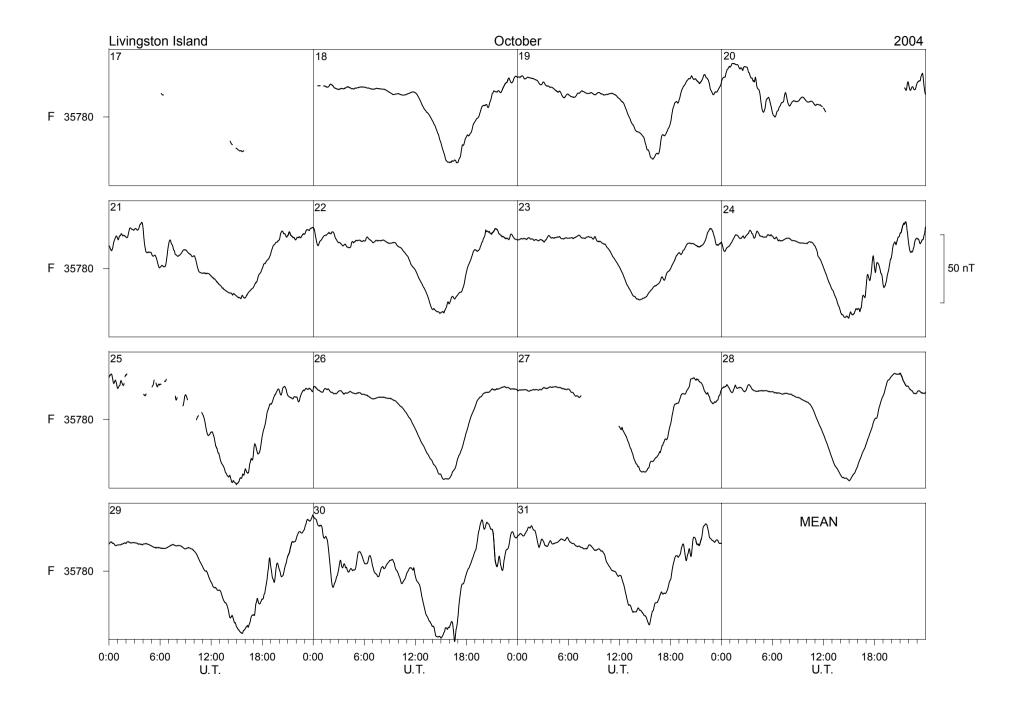


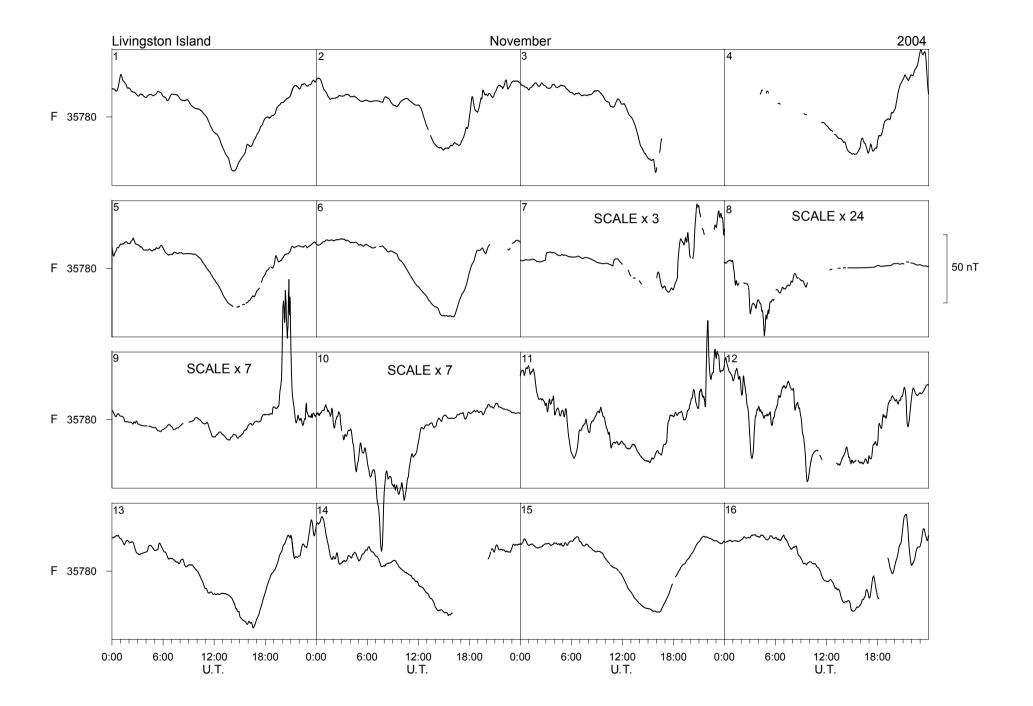


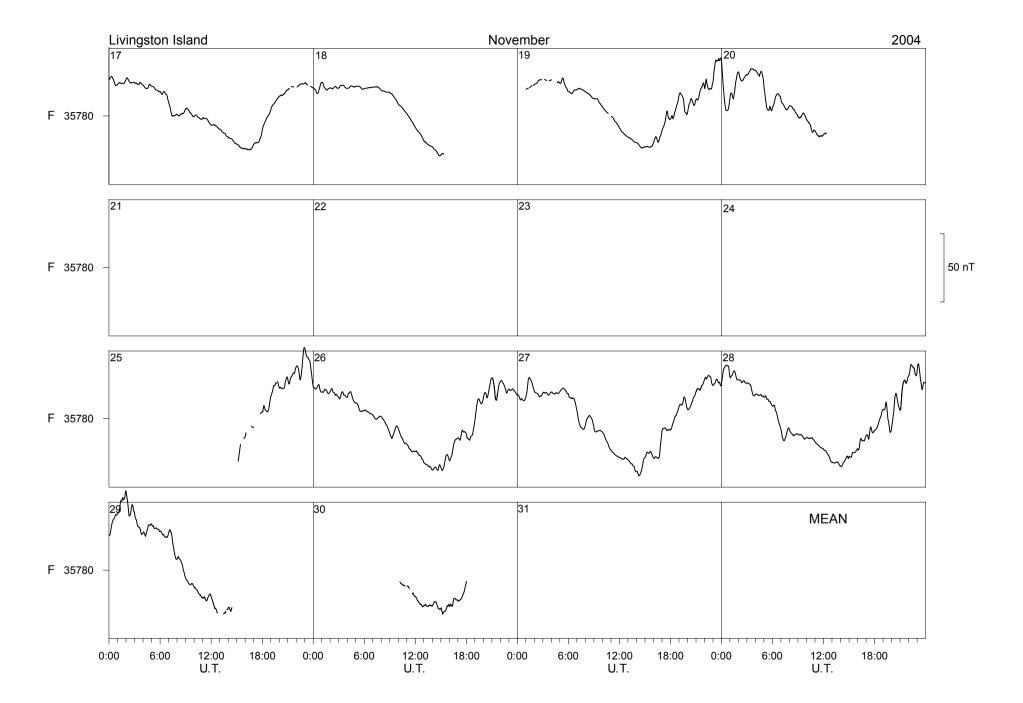


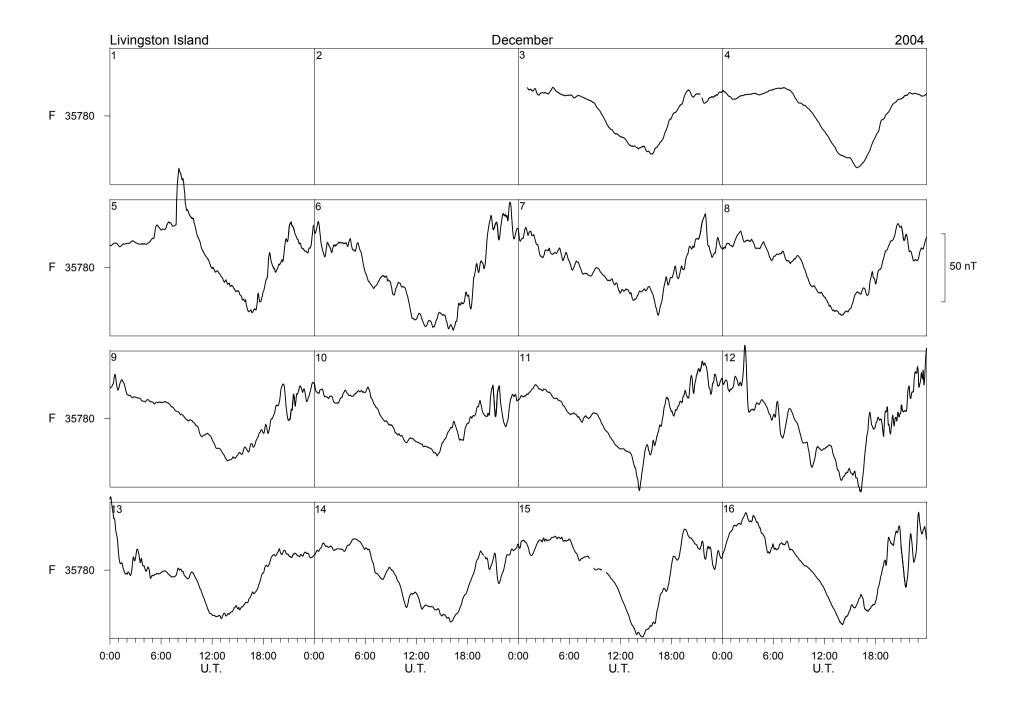


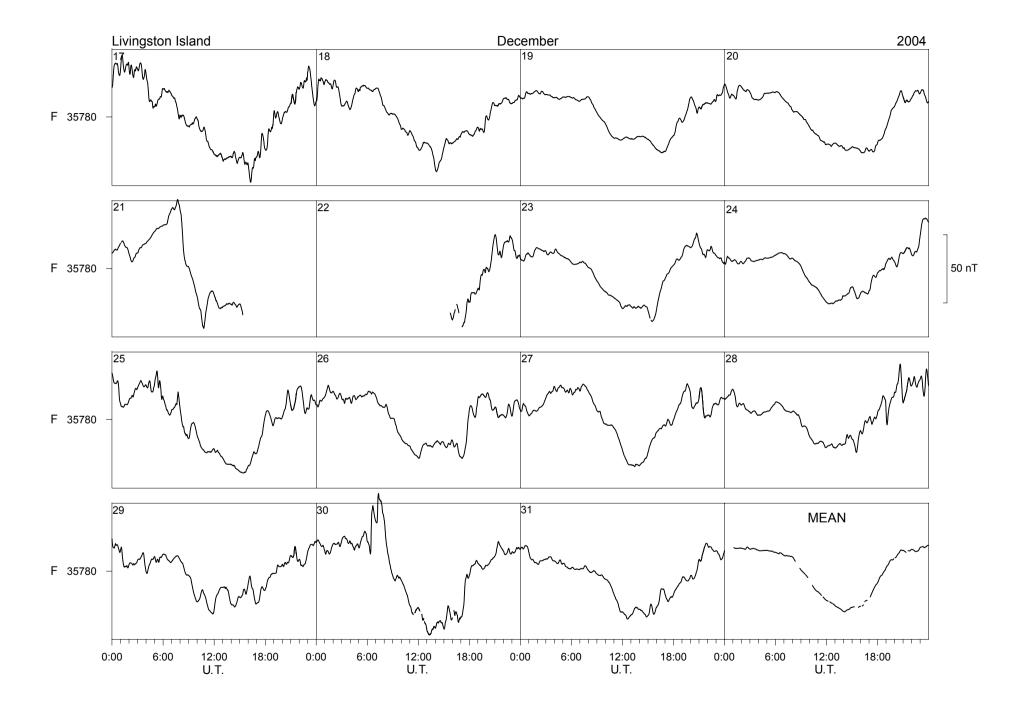


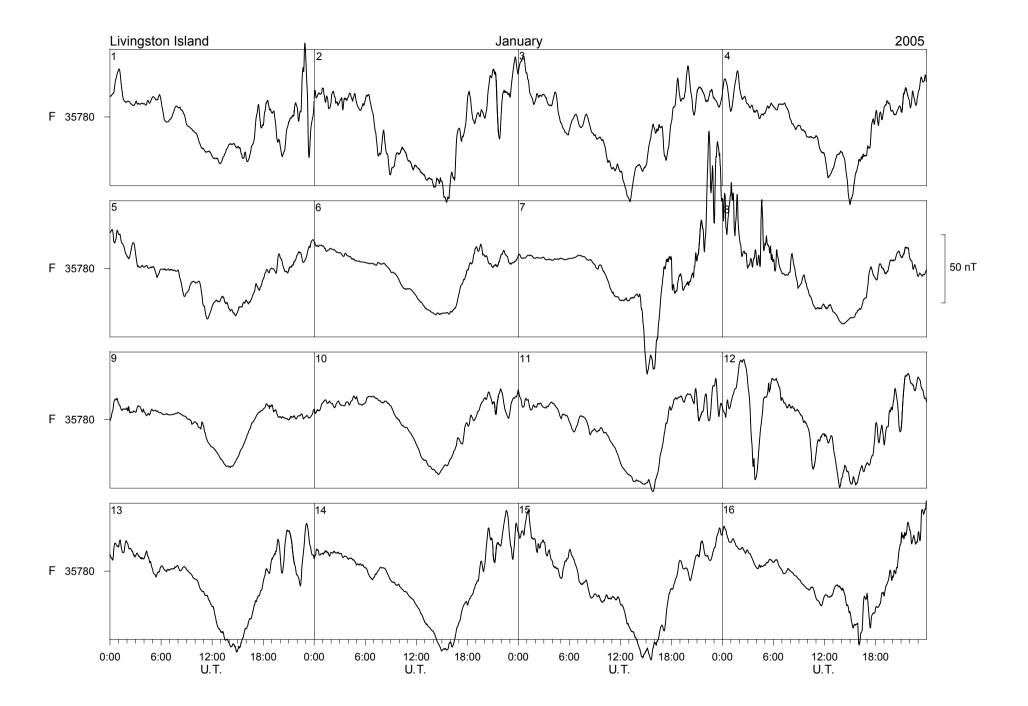


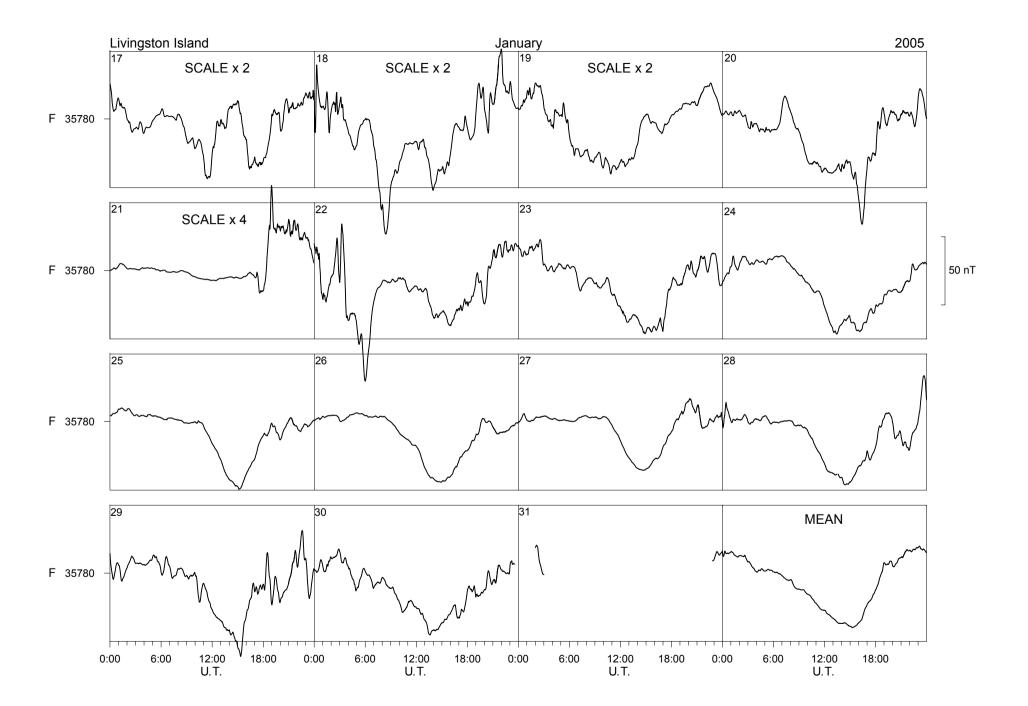


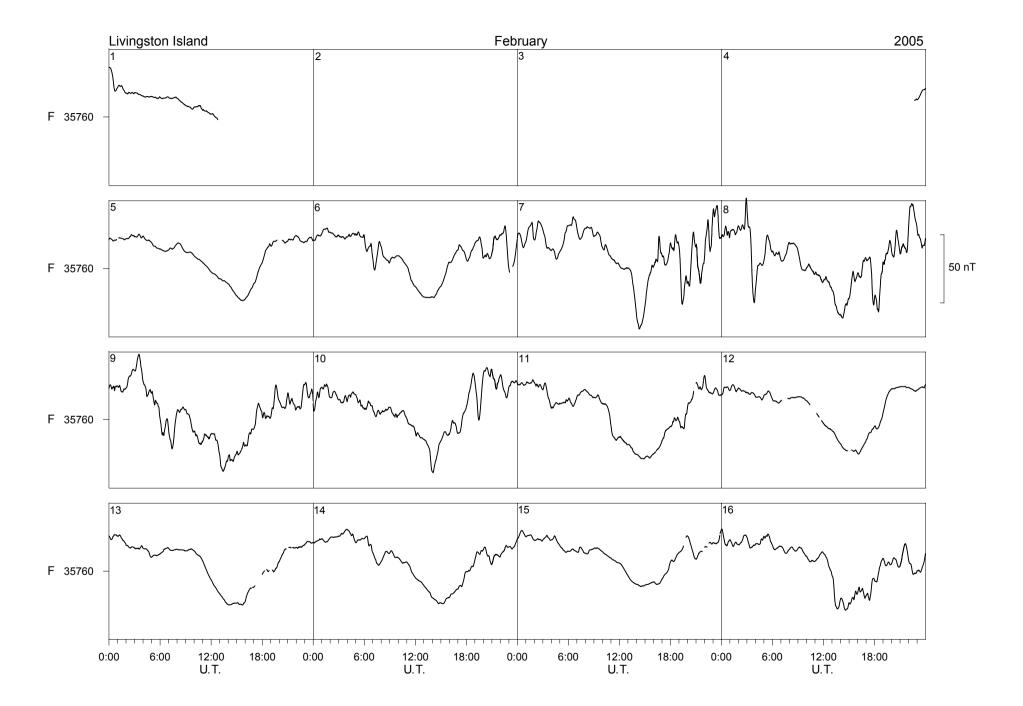


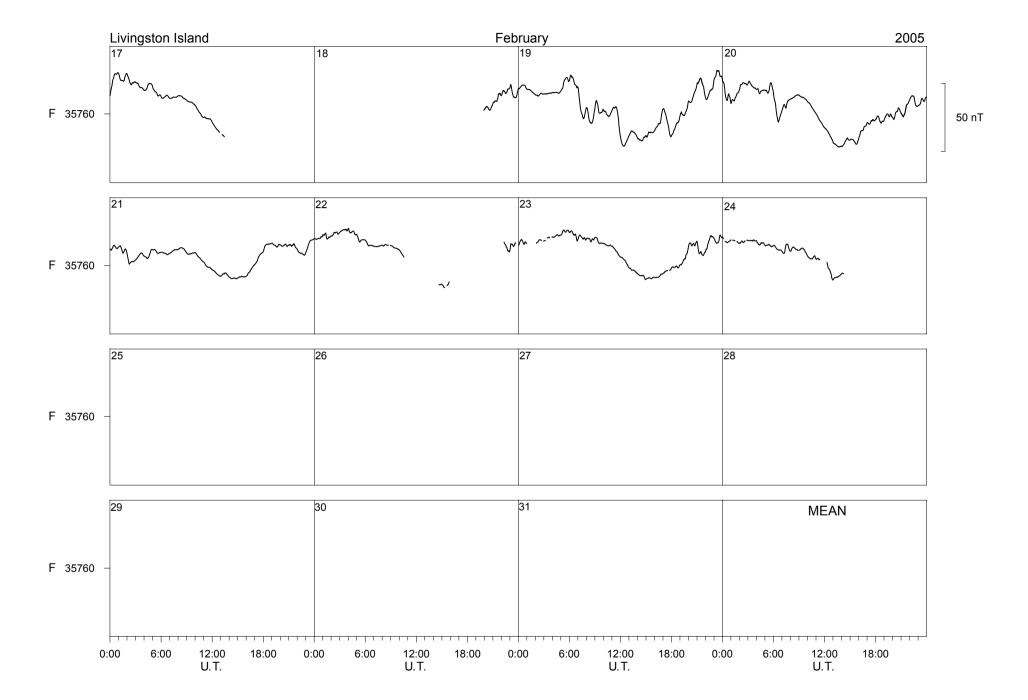












| IVINGSTON ANUARY 20 | | MAGN | ETIC | OBSER | CVATOR | ĽΥ | ח | = 14 | DECE | EES E | יי פוו.דכ | | NATION ROUANT | | | ጥር በ | 1 MTN | गणस्ट्र | | | | | | | |
|------------------------|-----|------|------|-------|--------|-----|-----|------|------|--------|-----------|-----|------------------|-----|-----|------|-------|---------|-----|-----|-----|-----|-----|-----|---|
| OUR (UT) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 9 | 105 1 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | ı |
| AY | • | _ | _ | • | - | • | • | • | • | _ | | | | | | | | | | | | | | | _ |
| 1 | 442 | 424 | 401 | 412 | 417 | 426 | 418 | 376 | 385 | 394 | 397 | 398 | 386 | 437 | 444 | 482 | 533 | 570 | 571 | 545 | 521 | 488 | 472 | 461 | |
| 2 | 447 | 437 | 415 | 421 | 427 | 415 | 404 | 397 | 392 | 396 | 403 | 407 | 399 | 400 | 433 | 449 | 456 | 473 | 485 | 493 | 488 | 460 | 461 | 461 | |
| 3 | 450 | 436 | 422 | 404 | 388 | 370 | 375 | 371 | 348 | 367 | 384 | 382 | 384 | 406 | 430 | 463 | 482 | 486 | 493 | 501 | 514 | 480 | 466 | 454 | |
| 4 | 444 | 432 | 420 | 427 | 405 | 373 | 366 | 373 | 382 | 387 | 399 | 390 | 401 | 440 | 437 | 475 | 488 | 510 | 499 | 477 | 481 | 481 | 474 | 466 | |
| 5 | 453 | 415 | 386 | 390 | 388 | 397 | 405 | 389 | 391 | 401 | 397 | 400 | 416 | 420 | 447 | 473 | 516 | 526 | 531 | 515 | 489 | 488 | 459 | 425 | |
| ; | 429 | 430 | 414 | 410 | 425 | 405 | 403 | 390 | 383 | 399 | 407 | 420 | 434 | 436 | 445 | 468 | 471 | 472 | 482 | 464 | | | 482 | 428 | |
| ' D | 435 | 439 | 438 | 430 | 396 | 341 | 317 | 347 | 368 | 371 | 387 | 399 | 456 | 499 | 502 | 523 | 531 | 545 | 543 | 503 | 467 | 460 | 449 | 436 | |
| Q | 431 | 429 | 424 | 426 | 420 | 417 | 410 | 404 | 403 | 397 | 389 | 399 | 393 | 405 | 412 | 435 | 461 | 482 | 481 | 475 | 465 | 467 | 459 | 439 | |
| 9 | 432 | 416 | 412 | 420 | 404 | 377 | 366 | 382 | 350 | 365 | 385 | 398 | 405 | 412 | 436 | 466 | 510 | 514 | 547 | 568 | 536 | 513 | 495 | 474 | |
|) | 458 | 442 | 435 | 412 | 401 | 397 | 382 | 370 | 357 | 334 | 392 | 399 | 400 | 404 | 425 | 462 | 496 | 507 | 502 | 497 | 485 | 471 | 460 | 453 | |
| | 443 | 443 | 442 | 438 | 433 | 426 | 415 | 395 | 378 | 378 | 385 | 405 | 417 | 415 | 447 | 471 | 503 | 526 | 507 | 496 | 477 | 454 | 442 | 434 | |
| Q | 428 | 427 | 425 | 422 | 418 | 412 | 409 | 402 | 394 | 393 | 396 | 401 | 396 | 406 | | 446 | 472 | 498 | 522 | 530 | 518 | 505 | 457 | 467 | |
| 3 | 454 | 439 | 434 | 427 | 435 | 434 | 419 | 408 | 410 | 406 | 398 | 382 | 360 | 389 | 425 | 452 | 475 | 521 | 530 | 515 | 514 | 488 | 479 | 446 | |
| Q | 434 | 417 | 410 | 416 | 427 | 431 | 433 | 429 | 408 | 395 | 397 | 405 | 402 | 409 | 432 | 459 | 483 | 504 | 520 | 520 | 496 | 468 | 458 | 448 | |
| | 423 | 425 | 425 | 431 | 426 | 428 | 430 | 415 | 406 | 399 | 403 | 398 | 405 | 398 | 422 | 471 | 479 | 491 | 487 | 491 | 495 | 500 | 487 | 468 | |
| D | 419 | 410 | 433 | 426 | 425 | 431 | 427 | 412 | 396 | 415 | 410 | 448 | 483 | 457 | 446 | 473 | 511 | 547 | 535 | 537 | 517 | 475 | 484 | 468 | |
| | 445 | 453 | 444 | 423 | 422 | 421 | 415 | 415 | 399 | 391 | 377 | 388 | 394 | 403 | 419 | 430 | 453 | 480 | 495 | 469 | 463 | 463 | 449 | 441 | |
| } | 438 | 437 | 431 | 415 | 393 | 406 | 404 | 393 | 386 | 390 | 399 | 392 | 411 | 438 | 458 | 473 | 502 | 511 | 497 | 492 | 506 | 477 | 470 | 458 | |
|) | 449 | 420 | 436 | 426 | 430 | 434 | 415 | 397 | 394 | 380 | 394 | 400 | 407 | 422 | 465 | 476 | 508 | 526 | 519 | 503 | 505 | 465 | 445 | 428 | |
| | 424 | 420 | 407 | 390 | 399 | 391 | 398 | 407 | 397 | 383 | 370 | 375 | 387 | 427 | 458 | 484 | 498 | 496 | 513 | 509 | 496 | 481 | 460 | 438 | |
| | 434 | 432 | 430 | 432 | 420 | 421 | 406 | 407 | 402 | 375 | 361 | 385 | 405 | 422 | 439 | 466 | 486 | 486 | 492 | 493 | 467 | 457 | 452 | 442 | |
| D | 436 | 384 | 365 | 327 | 363 | 333 | 344 | 302 | 353 | 350 | 344 | 409 | 492 | 530 | 510 | 520 | 529 | 544 | 558 | 581 | 529 | 509 | 448 | 453 | |
| D | 433 | 420 | 437 | 424 | 420 | 431 | 425 | 399 | 383 | 424 | 438 | 446 | 467 | 461 | | 496 | 543 | 589 | 560 | 569 | 512 | 488 | 480 | 461 | |
| ļ | 451 | 350 | 428 | 442 | 437 | 426 | 427 | 412 | 409 | 414 | 416 | 416 | 430 | 433 | 447 | 476 | 501 | 524 | 525 | 508 | 505 | 498 | 489 | 473 | |
| D | 420 | 421 | 377 | 373 | 393 | 407 | 399 | 407 | 382 | 406 | 429 | 442 | 455 | 442 | 455 | 489 | 507 | 522 | 548 | 536 | 532 | 514 | 479 | 444 | |
| | 432 | 429 | 445 | _ | 426 | 434 | 431 | | 412 | 407 | 397 | 394 | 404 | 407 | 442 | 476 | 493 | 516 | 518 | 521 | 513 | 512 | | | |
| | 449 | 397 | 401 | 408 | 414 | 431 | 430 | 432 | 408 | 403 | 391 | 388 | 377 | 384 | 416 | 445 | 487 | 521 | 507 | 490 | 476 | 468 | 455 | 448 | |
| 3 | 418 | 328 | 398 | 421 | 416 | 392 | 360 | 382 | 369 | 377 | 388 | 369 | 386 | 411 | 423 | 445 | 474 | 497 | 506 | 509 | 470 | 467 | 450 | 449 | |
| Q | 442 | 437 | 434 | 426 | 416 | 411 | 410 | 408 | 400 | 391 | 402 | 415 | 399 | 400 | 413 | 437 | 468 | 490 | 493 | 482 | 471 | 463 | 456 | 445 | |
|) | 435 | 445 | 439 | 434 | 412 | 397 | 384 | 356 | 340 | 343 | 349 | 397 | 419 | 426 | 425 | 444 | 467 | 487 | 494 | 502 | 485 | 468 | 439 | 437 | |
| . Q | 436 | 437 | 423 | 424 | 421 | 412 | 399 | 390 | 380 | 366 | 360 | 382 | 404 | 393 | 403 | 428 | 450 | 472 | 489 | 484 | 475 | 455 | 443 | 435 | |
| AN | 437 | 422 | 420 | 416 | 413 | 407 | 401 | 393 | 386 | 387 | 392 | 401 | 412 | 424 | 440 | 466 | 491 | 511 | 514 | 509 | 496 | 479 | 464 | 449 | |
| AN Q | 434 | 430 | 423 | 423 | 420 | 417 | 412 | 406 | 397 | 388 | 389 | 400 | 399 | 403 | | 441 | 467 | 489 | 501 | 498 | 485 | 472 | 455 | 447 | |
| EAN D | 429 | 415 | 410 | 396 | 399 | 388 | 382 | 373 | 377 | 393 | 402 | 429 | 471 | 478 | | 500 | 524 | 549 | 549 | 545 | 511 | 489 | 468 | 452 | |

| | /INGSTON I | | MAGN | ETIC | OBSER | VATOR | Y | н | = 20 | 000 n | יז. דים | S TAR | | ZONTAL OUANTIT | | | nT) | | | | | | | | | |
|----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------------|------------|------------|------------|------|------------|------------|------------|-------------|-----|------------|------------|------------|
| | JR (UT) | . 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DAY | • • | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | 198 | 213 | 201 | 205 | 207 | 212 | 213 | 200 | 188 | 180 | 188 | 182 | 171 | 158 | 184 | 164 | 167 | 167 | 158 | 184 | 191 | 195 | 197 | 200 | 188 |
| 2 | | 210 | 208 | 210 | 204 | 211 | 208 | 206 | 202 | 196 | 194 | 192 | 193 | 201 | 198 | 186 | 186 | 198 | 203 | 184 | 190 | 189 | 204 | 208 | 212 | 200 |
| 3 | | 216 | 228 | 223 | 226 | 217 | 217 | 213 | 210 | 196 | 185 | 194 | 196 | 197 | 194 | 194 | 184 | 184 | 182 | 192 | 191 | 191 | 195 | 200 | 202 | 201 |
| 4 | | 210 | 199 | 198 | 211 | 215 | 220 | 204 | 204 | 196 | | 194 | 186 | 180 | 180 | 191 | 179 | 198 | 201 | 193 | 180 | 196 | 204 | | 199 | 197 |
| 5 | | 205 | 212 | 218 | 208 | 204 | 208 | 214 | 202 | 195 | 186 | 183 | 177 | 180 | 174 | 168 | 186 | 195 | 202 | 204 | 199 | 197 | 207 | 192 | 212 | 197 |
| 6 | | 211 | 212 | 208 | 205 | 205 | 208 | 202 | 198 | 189 | 184 | 183 | 181 | 178 | 181 | 181 | 181 | 191 | 206 | 208 | 197 | | | 233 | 206 | 198 |
| 7 | D | 188 | 208 | 209 | 203 | 202 | 189 | 196 | 197 | 220 | 200 | 185 | 173 | 165 | 165 | 159 | 160 | 189 | 191 | 203 | 192 | 198 | 192 | 186 | 189 | 190 |
| 8 | Q | 193 | 193 | 198 | 200 | 202 | 204 | 204 | 200 | 194 | 191 | 187 | 183 | 179 | 173 | 170 | 170 | 174 | 190 | 196 | 188 | 198 | 212 | 208 | 204 | 192 |
| 9 | | 205 | 207 | 207 | 207 | 202 | 205 | 200 | 206 | 219 | 221 | 204 | 196 | 172 | 162 | 148 | 152 | 179 | 189 | 226 | 201 | 194 | 206 | 210 | 222 | 198 |
| 10 | | 218 | 212 | 216 | 227 | 219 | 220 | 218 | 204 | 204 | 188 | 191 | 180 | 174 | 166 | 151 | 138 | 148 | 169 | 188 | 186 | 187 | 194 | 197 | 189 | 191 |
| 11 | | 194 | 194 | 202 | 204 | 201 | 206 | 205 | 200 | 193 | 204 | 192 | 197 | 191 | 183 | 151 | 155 | 150 | 157 | 169 | 191 | 187 | 188 | 192 | 195 | 188 |
| 12 | 0 | 201 | 203 | 207 | 213 | 209 | 211 | 214 | 206 | 203 | 200 | 198 | 198 | 191 | 181 | - | 157 | 147 | 159 | 180 | 189 | 198 | 184 | 203 | 199 | 193 |
| 13 | ~ | 193 | 200 | 199 | 200 | 200 | 200 | 198 | 196 | 192 | 190 | 189 | 183 | 184 | 186 | | 172 | 185 | 175 | 175 | 181 | 197 | 185 | 192 | 206 | 189 |
| 14 | Q | 216 | 215 | 203 | 210 | 209 | 212 | 219 | 218 | 214 | 207 | 199 | 193 | 194 | 188 | 171 | 170 | 172 | 175 | 176 | 181 | 190 | 197 | 200 | 192 | 197 |
| 15 | | 195 | 205 | 211 | 214 | 216 | 219 | 222 | 223 | 219 | 213 | 212 | 210 | 201 | 193 | 164 | 147 | 157 | 173 | 174 | 184 | 191 | 184 | 179 | 186 | 195 |
| | _ | 100 | 011 | | 010 | | 010 | | | | 100 | | 100 | | | | 100 | 450 | 4-0 | | | | | | | 404 |
| 16 | D | 192 | 211 | | 210 | 216 | 212 | 211 | 211 | 203 | | 195 | 180 | 200 | | 186 | | | | 180 | 180 | 188 | | 182 | 191 | 194 |
| 17 | | 194 | 202 205 | 201 207 | 205 212 | 203 200 | 206 207 | 203 | 200 199 | 199 | | 190 | 186 176 | _ | 171 | 164 | 160 | | 177 172 | 178 180 | 185 | 192 | | 190 198 | 199 194 | 189 189 |
| 18 19 | | 203 196 | 205 | 207 | 212 | 200 | 207 | 197 209 | 204 | 194 203 | 188 197 | 182 199 | 197 | 173 198 | 168 185 | 160 174 | 161 176 | 162 | | | 201 172 | 202 184 | | 202 | 194 | 189 192 |
| 20 | | 195 | 201 | 200 | | 191 | | 193 | | 193 | 192 | | 175 | | 146 | | | 151 | | 175 | | 173 | | | 190 | 179 |
| 20 | | 195 | 201 | 200 | 201 | 191 | 193 | 195 | 195 | 195 | 132 | 104 | 175 | 102 | 140 | 133 | 143 | 131 | 101 | 173 | 100 | 1,3 | 1/1 | 104 | 137 | 173 |
| 21 | | 195 | 196 | 201 | 207 | 211 | 205 | 199 | 193 | 199 | 194 | 195 | 190 | 178 | 159 | 149 | 149 | 148 | 161 | 179 | 181 | 195 | 192 | 198 | 193 | 186 |
| 22 | D | 200 | 218 | 244 | 251 | 260 | 233 | 227 | 230 | 219 | 218 | 195 | 101 | 108 | 131 | 134 | 131 | 120 | 136 | 129 | 147 | 152 | 166 | 185 | 178 | 180 |
| 23 | D | 163 | 166 | 170 | 172 | 174 | 181 | 166 | 171 | 159 | 168 | 175 | 162 | 162 | 156 | | 128 | 112 | 131 | 148 | 163 | 157 | 173 | 167 | 177 | 161 |
| 24 | | 178 | 198 | 195 | 208 | 217 | 216 | 206 | 200 | 195 | | | 185 | 169 | _ | 151 | _ | 157 | 165 | | 172 | 180 | | 187 | 190 | 183 |
| 25 | D | 202 | 195 | 160 | 151 | 148 | 166 | 174 | 159 | 157 | 159 | 192 | 195 | 179 | 160 | 142 | 140 | 140 | 143 | 158 | 159 | 159 | 162 | 171 | 170 | 164 |
| 26 | | 170 | 174 | 185 | 195 | 193 | 195 | 199 | 188 | 182 | 179 | 182 | 175 | 168 | 161 | 146 | 144 | 148 | 157 | 169 | 175 | 177 | 176 | | | 175 |
| 27 | | 180 | 160 | 167 | 174 | 181 | 187 | 192 | 193 | 177 | 172 | 176 | 185 | 179 | 168 | 155 | 159 | 154 | 161 | 170 | 187 | 198 | 205 | 209 | 199 | 179 |
| 28 | | 207 | 185 | 186 | 197 | 199 | 199 | 194 | 193 | 190 | 183 | 182 | 180 | 173 | 172 | 169 | 163 | 162 | 148 | 168 | 173 | 183 | 193 | 199 | 198 | 183 |
| 29 | Q | 199 | 200 | 205 | 208 | 202 | 196 | 197 | 197 | 195 | 190 | 192 | 205 | 198 | 184 | 173 | 159 | 154 | 159 | 169 | 183 | 198 | 195 | 202 | 198 | 190 |
| 30 | | 203 | 206 | 208 | 209 | 207 | 204 | 207 | 213 | 210 | 192 | 186 | 184 | 188 | 182 | 181 | 170 | 162 | 163 | 169 | 191 | 192 | 204 | 201 | 199 | 193 |
| 31 | Q | 206 | 207 | 209 | 207 | 202 | 200 | 197 | 198 | 198 | 197 | 189 | 186 | 190 | 179 | 164 | 154 | 155 | 167 | 175 | 187 | 190 | 197 | 204 | 200 | 190 |
| ME. | \ NT | 198 | 201 | 202 | 205 | 204 | 205 | 203 | 200 | 196 | 192 | 190 | 184 | 179 | 173 | 165 | 160 | 163 | 170 | 178 | 183 | 188 | 191 | 196 | 196 | 188 |
| | AN O | 203 | 201 | 202 | 205 | 204 | 205 | 203 | 204 | 201 | 192 | 190 | 193 | 179 | 181 | | 162 | 160 | 170 | 179 | 186 | 195 | 191 | 203 | 196 | 192 |
| | AN D | 189 | | | 197 | | 205 196 | 195 | | | 189 | | 162 | | | | | | | | | 171 | | | 181 | 178 |
| ME | מ זע | 103 | 200 | 130 | 171 | 200 | 190 | 130 | 1 74 | T 7 T | 103 | 100 | 102 | 103 | 101 | | 140 | T-40 | 131 | 103 | 100 | 1 /1 | 1/0 | 1/0 | 101 | 1/0 |

LIVINGSTON ISLAND MAGNETIC OBSERVATORY VERTICAL INTENSITY

| LIVINGSTON | | MAGI | METIC | OBSE | RVATO | RY | | | | | | | ICAL IN | | | | | | | | | | | | |
|-------------|------|------|-------|-------|-------|------|--------|------|--------|------|--------|-------|---------|------|--------|-------|------|------|------|-------|------|------|------|------|--------------|
| JANUARY 200 |)4 | | | | | | Z | =-29 | 9500 r | T PL | JS TAI | BULAR | QUANTII | 'IES | (UNITS | S nT) | | | | | | | | | |
| HOUR (UT) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | -143 | -150 | -141 | -139 | -138 | -126 | -117 · | -116 | -112 | -105 | -114 | -114 | -106 | -90 | -109 | -92 | -86 | -92 | -92 | -119 | -132 | -147 | -146 | -144 | -120 |
| 2 | -149 | -146 | -143 | -140 | -141 | -137 | -137 - | -134 | -127 | -117 | -112 | -108 | -110 | -112 | -103 | -108 | -110 | -110 | -104 | -113 | -114 | -132 | -140 | -140 | -124 |
| 3 | -139 | -149 | -146 | -144 | -135 | -132 | -128 - | -118 | -112 | -99 | -101 | -107 | -100 | -99 | -97 | -98 | -102 | -104 | -114 | -119 | -130 | -136 | -137 | -139 | -120 |
| 4 | | | | | -143 | | -124 | | | | | | | | -94 | | | | | | -134 | | _ | | -121 |
| 5 | | | | | -135 | | -130 | | | | | | | | -79 | | | | | | -125 | | | | -121 |
| J | 130 | 11, | 140 | 133 | 133 | 120 | 130 | | | | | 101 | 30 | 50 | ,, | 7- | ,,, | | | | 123 | 13, | 130 | 133 | |
| 6 | -144 | _138 | -140 | -127 | -131 | -129 | -116 - | -125 | -123 | -117 | _113 | -108 | -107 | _110 | -109 | -106 | -107 | -116 | -122 | _121 | | | -160 | -170 | -125 |
| 7 D | | | | | -127 | | -112 | _ | _ | | _ | | | | -94 | | | | | | -150 | | | | -119 |
| 7 Б 8 Q | | | | | -139 | | -139 | | | | | | | | -108 | | | | | _ | -129 | | | | -119 -128 |
| 8 Q 9 | | | | | | | | _ | | | | | _ | _ | | | | | _ | | | | | | -128 |
| | | | | | -133 | | -124 | | | | | | | | -95 | | | | | | -135 | | | | |
| 10 | -148 | -141 | -141 | -143 | -126 | -134 | -135 · | -116 | -81 | -88 | -109 | -109 | -107 | -104 | -99 | -88 | -91 | -111 | -126 | -131 | -127 | -134 | -140 | -135 | -119 |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | | _ | | _ | -131 | | -136 · | | | | | | | | -88 | | | | | | -135 | | | | -122 |
| 12 Q | | | | | -135 | | -139 · | | | | | | | | | | | | | | -134 | | | | -124 |
| 13 | -143 | -144 | -139 | -135 | -135 | -135 | -133 · | -131 | -127 | -128 | -125 | -121 | | | -91 | | | | -104 | -115 | -136 | -127 | -144 | -155 | -125 |
| 14 Q | -158 | -152 | -141 | -138 | -136 | -133 | -137 · | -137 | -137 | -131 | -124 | -116 | -113 | -108 | -99 | -97 | -93 | -94 | -98 | -105 | -118 | -123 | -139 | -134 | -123 |
| 15 | -141 | -141 | -142 | -139 | -135 | -131 | -135 - | -137 | -130 | -121 | -117 | -116 | -112 | -114 | -104 | -98 | -118 | -124 | -127 | -126 | -139 | -144 | -148 | -169 | -130 |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 D | -170 | -158 | -151 | -145 | -142 | -132 | -130 · | -135 | -128 | -122 | -116 | -96 | -107 | -113 | -111 | -109 | -107 | -96 | -117 | -129 | -155 | -162 | -150 | -159 | -131 |
| 17 | -156 | -151 | -147 | -143 | -136 | -139 | -136 · | -131 | -132 | -125 | -118 | -114 | -107 | -109 | -109 | -111 | -109 | -116 | -123 | -128 | -134 | -142 | -135 | -138 | -129 |
| 18 | -138 | -142 | -139 | -139 | -129 | -123 | -111 - | -128 | -125 | -122 | -117 | -113 | -109 | -97 | -95 | -95 | -98 | -113 | -125 | -137 | -147 | -141 | -150 | -144 | -124 |
| 19 | -146 | -147 | -141 | -139 | -136 | -135 | -133 - | -129 | -127 | -122 | -122 | -115 | -118 | -113 | -100 | -104 | -95 | -114 | -127 | -128 | -145 | -150 | -165 | -163 | -130 |
| 20 | -154 | -153 | -144 | -135 | -125 | -126 | -129 - | -127 | -130 | -126 | -119 | -110 | -96 | -80 | -79 | -91 | -99 | -105 | -114 | -111 | -122 | -128 | -142 | -155 | -121 |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | -155 | -149 | -146 | -144 | -141 | -133 | -132 - | -123 | -119 | -122 | -120 | -112 | -108 | -105 | -108 | -109 | -113 | -124 | -136 | -140 | -152 | -148 | -152 | -148 | -131 |
| 22 D | | | | | -156 | | -120 - | | | | | | | | -95 | | | | | | -179 | | | | -129 |
| 23 D | | | | | -134 | _ | -129 | | | | | | | | | | | | | _ | -172 | | | | -138 |
| 24 | | | | | -154 | | -138 | | | | | | | | -102 | | | | | | -138 | | _ | _ | -133 |
| 25 D | | | | | -133 | | -129 | _ | | | _ | | | | -102 | | | | | _ | -150 | | | | -134 |
| 23 D | -104 | -140 | -130 | -12/ | -133 | -140 | -129 | -113 | -120 | -125 | -129 | -123 | -110 | -110 | -103 | -103 | -109 | -11/ | -131 | -142 | -130 | -104 | -1/4 | -1// | -134 |
| 26 | 160 | 150 | 150 | 1 = 1 | -143 | 142 | -142 | 120 | 126 | 100 | 120 | 100 | 115 | 100 | -94 | 0.6 | 100 | 100 | 101 | 1 2 1 | -142 | 122 | | | -129 |
| 26 27 | | | | | | | | | | | | | _ | | | | | | | _ | | | | | -129 -134 |
| = - | | | | | -131 | | -147 · | _ | | | | | _ | | -103 | | | | | _ | -141 | _ | | | _ |
| 28 | | | | | -136 | | -119 · | | | | | | | | -101 | | | | | | -134 | | | | -123 |
| 29 Q | | | | | -128 | | -126 | | | | | | _ | | -102 | | | | | | -137 | | | | -124 |
| 30 | -139 | -137 | -135 | -134 | -135 | -132 | -132 · | -132 | -123 | -111 | -109 | -98 | -103 | -105 | -102 | -92 | -94 | -98 | -108 | -125 | -127 | -139 | -140 | -139 | -120 |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 31 Q | -141 | -137 | -136 | -132 | -128 | -127 | -126 · | -124 | -118 | -115 | -109 | -106 | -114 | -110 | -103 | -97 | -98 | -105 | -112 | -123 | -132 | -133 | -141 | -134 | -121 |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| MEAN | -149 | -148 | -143 | -140 | -136 | -133 | -130 · | | | | | | -106 | -104 | -99 | -99 | -102 | -109 | -118 | -128 | -138 | -143 | -148 | -151 | -126 |
| MEAN Q | -145 | -141 | -139 | -137 | -133 | -132 | -133 · | -132 | -129 | -125 | -120 | -116 | -113 | -109 | | -97 | -96 | -102 | -110 | -121 | -130 | -132 | -141 | -141 | -124 |
| MEAN D | -157 | -154 | -151 | -142 | -138 | -130 | -124 | -122 | -119 | -116 | -116 | -97 | -89 | -101 | | -104 | -108 | -115 | -130 | -143 | -161 | -167 | -167 | -166 | -130 |
| | | | | | | | | | | | | | | | | | | | | | | | | | |

| LIVINGSTON JANUARY 200 | | MAGN | ETIC | OBSEF | VATOR | Ϋ́ | F | ' = 35 | 500 n | T PLU | S TAE | | AL INTEN QUANTIT | | (UNITS | S nT) | | | | | | | | | |
|---------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|---------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|----|
| HOUR (UT) DAY | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | ME |
| 1 | 370 | 384 | 370 | 371 | 371 | 364 | 357 | 349 | 339 | 328 | 340 | 337 | 325 | 304 | 334 | 309 | 305 | 310 | 306 | 342 | 357 | 371 | 372 | 372 | 3 |
| 2 | 382 | 378 | 377 | 371 | 376 | 371 | 370 | 365 | 356 | 346 | 341 | 338 | 345 | 345 | 331 | 335 | 343 | 346 | 330 | 341 | 341 | 364 | 374 | 376 | 3. |
| 3 | 377 | 392 | 386 | 387 | 374 | 372 | 367 | 357 | 343 | 326 | 334 | 339 | 334 | 332 | 330 | 325 | 329 | 329 | 343 | 347 | 355 | 363 | 366 | 369 | 3. |
| 4 | 376 | 370 | 365 | 378 | 380 | 377 | 358 | 361 | 343 | 343 | 334 | 330 | 320 | 319 | 325 | 315 | 342 | 350 | 350 | 341 | 361 | 372 | 365 | 364 | 3 |
| 5 | 370 | 381 | 384 | 372 | 367 | 363 | 369 | 355 | 349 | 341 | 340 | 326 | 323 | 313 | 300 | 320 | 329 | 346 | 352 | 353 | 355 | 370 | 362 | 392 | 3 |
| 6 | 378 | 374 | 373 | 361 | 365 | 364 | 350 | 355 | 349 | 341 | 337 | 332 | 329 | 333 | 332 | 330 | 336 | 352 | 358 | 351 | | | 404 | 397 | 3 |
| 7 D | 358 | 382 | 379 | 366 | 360 | 345 | 343 | 338 | 349 | 330 | 321 | 315 | 307 | 310 | 308 | 314 | 346 | 346 | 359 | 357 | 376 | 371 | 362 | 365 | 3 |
| 8 Q | 366 | 363 | 367 | 368 | 370 | 372 | 370 | 366 | 358 | 354 | 351 | 343 | 336 | 333 | 325 | 322 | 325 | 344 | 352 | 350 | 359 | 372 | 369 | 374 | 3 |
| 9 | 379 | 382 | 381 | 373 | 364 | 363 | 356 | 343 | 349 | 351 | 335 | 333 | 319 | 316 | 302 | 308 | 331 | 345 | 382 | 362 | 361 | 371 | 376 | 391 | 3 |
| 10 | 386 | 376 | 379 | 386 | 369 | 375 | 375 | 351 | 322 | 320 | 338 | 332 | 327 | 320 | 307 | 291 | 299 | 327 | 350 | 354 | 351 | 360 | 367 | 359 | 3 |
| 11 | 362 | | 364 | 366 | 362 | 368 | 368 | 360 | 350 | 360 | 338 | 343 | 336 | 332 | 298 | 310 | 304 | 314 | 328 | 355 | 357 | 361 | 369 | 370 | 3 |
| 12 Q | 373 | 371 | 372 | 376 | 370 | 371 | 376 | 367 | 363 | 357 | 351 | 346 | 339 | 329 | | 304 | 293 | 302 | 325 | 349 | 363 | 357 | 381 | 381 | |
| 13 | 368 | 372 | 367 | 365 | 365 | 364 | 361 | 360 | 353 | 353 | 351 | 344 | 342 | 338 | 313 | 317 | 332 | 319 | 325 | 337 | 364 | 350 | 367 | 384 | |
| L4 Q | 392 | 387 | 371 | 372 | 370 | 370 | 377 | _ | 374 | 365 | 355 | 345 | 343 | 335 | 318 | 316 | 315 | 316 | 320 | 329 | 345 | 353 | 368 | 359 | |
| L5 | 367 | 372 | 377 | 376 | 374 | 372 | 377 | 379 | 372 | 360 | 357 | 354 | 346 | 344 | 319 | 304 | 326 | 340 | 344 | 348 | 363 | 363 | 364 | 385 | |
| .6 D | 389 | 390 | 381 | | 379 | 369 | 367 | 371 | 361 | | 346 | 321 | 342 | 343 | 337 | 332 | 329 | 306 | 339 | 348 | 374 | 385 | 367 | 379 | |
| .7 | 378 | 379 | 375 | 374 | 367 | 372 | 368 | 362 | 362 | 355 | 345 | 339 | 327 | 327 | 322 | 322 | 322 | 336 | 342 | 351 | 359 | 367 | 359 | 367 | |
| .8 | 369 | 374 | _ | _ | 360 | 359 | 343 | 358 | 353 | 347 | 339 | 333 | 328 | 315 | 309 | 310 | 313 | 330 | 345 | 367 | 376 | 365 | 376 | 369 | |
| L9 20 | 372 377 | 377 380 | 371 373 | 372 366 | 370 351 | 370 353 | 368 356 | 362 355 | 360 357 | 352 353 | 353 343 | 347 330 | 350 311 | 338 289 | 321 285 | 325 297 | 310 307 | 330 318 | 345 333 | 343 326 | 364 339 | 369 342 | 391 362 | 385 380 | |
| 21 | 378 | 374 | 374 | 376 | 375 | 365 | 362 | 351 | 351 | 350 | 350 | 340 | 330 | 316 | 314 | 315 | 318 | 334 | 354 | 358 | 376 | 371 | 377 | 371 | |
| 22 D | 376 | 393 | 419 | 414 | 416 | 380 | 367 | 368 | 354 | 361 | 350 | 246 | 215 | 271 | 294 | 302 | 296 | 319 | 319 | 348 | 374 | 385 | 408 | 390 | |
| 23 D | 368 | 364 | 360 | 357 | 349 | 344 | 341 | 349 | 337 | 336 | 339 | 325 | 326 | 324 | | 296 | 282 | 314 | 344 | 366 | 371 | 387 | 378 | 383 | |
| 24 | 391 | 401 | 378 | 387 | 390 | 386 | 371 | 367 | 362 | 351 | 345 | 339 | 325 | 315 | 310 | 309 | 313 | 321 | 323 | 346 | 356 | 359 | 369 | 379 | |
| 25 D | 390 | 372 | 343 | 330 | 334 | 356 | 345 | 326 | 333 | 333 | 355 | 352 | 339 | 327 | 307 | 307 | 310 | 318 | 338 | 347 | 354 | 367 | 380 | 382 | |
| :6 | 375 | 370 | 371 | 375 | 368 | 369 | 370 | 354 | 348 | 347 | 350 | 341 | 330 | 320 | 300 | 301 | 308 | 319 | 336 | 347 | 357 | 349 | | | |
| .7 | 381 | 360 | 358 | 351 | 351 | 365 | 370 | 369 | 355 | 348 | 351 | 358 | 350 | 332 | 313 | 317 | 311 | 319 | 335 | 356 | 369 | 374 | 381 | 371 | |
| 18 | 380 | 372 | 355 | 365 | 365 | 361 | 348 | 354 | 354 | 342 | 340 | 339 | 333 | 328 | 319 | 311 | 309 | 298 | 323 | 339 | 354 | 365 | 370 | 371 | |
| 9 Q | 368 | 368 | 370 | 370 | 360 | 353 | 355 | 358 | 356 | 350 | 347 | 357 | 348 | 334 | 322 | 311 | 310 | 317 | 334 | 351 | 365 | 362 | 369 | 366 | |
| 0 | 369 | 370 | 369 | 369 | 369 | 364 | 366 | 369 | 361 | 341 | 335 | 325 | 332 | 330 | 327 | 313 | 309 | 313 | 325 | 351 | 354 | 370 | 370 | 367 | |
| 1 Q | 373 | 370 | 370 | 366 | 360 | 358 | 355 | 354 | 349 | 347 | 337 | 332 | 341 | 332 | 318 | 307 | 309 | 322 | 332 | 347 | 356 | 361 | 371 | 364 | |
| EAN | 375 | 376 | 373 | 371 | 368 | 366 | 362 | 358 | 352 | 347 | 343 | 335 | 329 | 324 | 315 | 313 | 316 | 326 | 338 | 349 | 360 | 366 | 373 | 375 | |
| EAN Q | 375 | 372 | 370 | 370 | 366 | 365 | 367 | 364 | 360 | 355 | 348 | 345 | 341 | 333 | | 312 | 310 | 320 | 333 | 345 | 358 | 361 | 372 | 369 | |
| EAN D | 376 | 380 | 376 | 369 | 368 | 359 | 353 | 350 | 347 | 343 | 342 | 312 | 306 | 315 | | 310 | 313 | 320 | 340 | 353 | 370 | 379 | 379 | 380 | |

| | STON ISLAND | MAGN | ETIC | OBSER | VATOR | Y | | | | | | _ | NATION | | | | | | | | | | | | |
|----------|-------------|------|------|-------|-------|-----|-----|-----|-----|-----|-----|--------|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| FEBRUAR | | | | | | | | | | | | TABULA | ~ | | | | | | | | | | | | |
| HOUR (UT | r) 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 432 | 431 | 420 | 394 | 388 | 397 | 396 | 385 | 391 | 395 | 400 | 395 | 388 | 388 | 414 | 435 | 462 | 478 | 481 | 483 | 482 | 466 | 446 | 441 | 425 |
| 2 | 436 | 436 | 434 | 428 | 426 | 417 | 403 | 362 | 371 | 347 | 383 | 378 | 365 | | | | | | | | | | | 433 | |
| 3 | 363 | 380 | 406 | 398 | 374 | 379 | 350 | 348 | 356 | 379 | 390 | 393 | 415 | 428 | 435 | 457 | 496 | 523 | 534 | 507 | 495 | 475 | 452 | 436 | 424 |
| 4 | 429 | 406 | 406 | 426 | 429 | 426 | 422 | 426 | 407 | 402 | 391 | 391 | 395 | 411 | 432 | 441 | 459 | 487 | 501 | 496 | 474 | 455 | 445 | | 433 |
| 5 | 423 | 424 | 390 | 393 | 415 | 423 | 418 | 425 | 411 | 394 | 404 | 396 | 384 | 389 | 412 | 442 | 467 | 494 | 490 | 470 | 455 | 444 | 437 | 430 | 426 |
| 6 | 425 | 427 | 427 | 427 | 420 | 403 | 359 | 353 | 376 | 375 | 404 | 426 | 410 | 406 | 431 | 460 | 489 | 519 | 531 | 506 | 475 | 456 | 426 | 414 | 431 |
| 7 | 416 | 417 | 417 | 425 | 423 | 420 | 413 | 409 | 416 | 410 | 392 | 387 | 393 | 400 | 410 | 439 | 469 | 490 | 502 | 503 | 481 | 452 | 440 | 435 | 432 |
| 8 Q | 432 | 428 | 427 | 424 | 419 | 415 | 414 | 406 | 397 | 393 | 385 | 371 | | | 397 | 426 | 455 | 479 | 490 | 489 | 475 | 469 | 451 | 441 | 429 |
| 9 | 436 | 426 | 427 | 425 | 424 | 421 | 414 | 406 | 397 | 388 | 377 | 376 | 367 | 362 | 395 | 431 | 457 | 489 | 514 | 520 | 509 | 478 | 456 | | 431 |
| 10 Q | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 D | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 D | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 D | 398 | 415 | 422 | 404 | 424 | 409 | 424 | 426 | 430 | 444 | 444 | 433 | 421 | 422 | 442 | 476 | 500 | 523 | 547 | 527 | 503 | 470 | 443 | 438 | 449 |
| 14 | 435 | 432 | 420 | 420 | 428 | 420 | 427 | 420 | 418 | 419 | 423 | 431 | 399 | 409 | 437 | 457 | 484 | 508 | 520 | 542 | 506 | 480 | 440 | 443 | 446 |
| 15 D | 435 | 411 | 361 | 377 | 389 | 405 | 377 | 393 | 410 | 463 | 498 | 438 | 398 | 392 | 408 | 451 | 483 | 505 | 512 | 500 | 474 | 444 | 422 | 414 | 432 |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | 400 | 432 | 444 | 445 | 441 | 445 | 445 | 440 | 436 | 437 | 422 | 407 | 401 | 403 | 414 | 441 | 470 | 493 | 499 | 485 | | 435 | 424 | 423 | 439 |
| 17 Q | 423 | 429 | 437 | 439 | 440 | 437 | 434 | 431 | 427 | 414 | 401 | 395 | 389 | 396 | 411 | 432 | 457 | 482 | 491 | 472 | 447 | 428 | 422 | 431 | 432 |
| 18 | 430 | 428 | 411 | 426 | 430 | 433 | 436 | 435 | 424 | 418 | 405 | 391 | 385 | 393 | 412 | 442 | 477 | 478 | 469 | 478 | 467 | 442 | 433 | 418 | 432 |
| 19 | 422 | 418 | 417 | 424 | 421 | 424 | 429 | 427 | 421 | 412 | 401 | 392 | 383 | 389 | 420 | 461 | 496 | 513 | 512 | 496 | 469 | 442 | 422 | 427 | 435 |
| 20 Q | 429 | 427 | 431 | 427 | 432 | 433 | 433 | 424 | 416 | 407 | 401 | 388 | 380 | 389 | 411 | 449 | 488 | 510 | | | | | | 427 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | 423 | 421 | | | | _ | 428 | 424 | | 402 | 384 | 373 | 367 | 375 | 408 | 430 | 456 | 489 | 503 | 497 | 470 | 445 | 431 | 432 | 427 |
| 22 | 432 | 422 | 424 | 414 | 414 | 414 | 411 | | 394 | 387 | 377 | 366 | 367 | 396 | 443 | 453 | 470 | 489 | 497 | 502 | | | 442 | 437 | 426 |
| 23 | 433 | 431 | 412 | 408 | 421 | 420 | 419 | 416 | 413 | 405 | 387 | 392 | 387 | 390 | 403 | 436 | 467 | 501 | 516 | 507 | 482 | 455 | 439 | 431 | 432 |
| 24 | 418 | 382 | 404 | 420 | 412 | 411 | 402 | 432 | 409 | 415 | 429 | 406 | 396 | 409 | 432 | 461 | 495 | 524 | 539 | 528 | 496 | 485 | 457 | 421 | 441 |
| 25 | 429 | 439 | 437 | 429 | 412 | 404 | 407 | 408 | 409 | 405 | 418 | 412 | 405 | 396 | 397 | 414 | 448 | 487 | 507 | 498 | 475 | 450 | 430 | 425 | 431 |
| 26 Q | 427 | 427 | 426 | 425 | 421 | 419 | 414 | 417 | 417 | 405 | 401 | 393 | 389 | 383 | 386 | 400 | 429 | 458 | 479 | 482 | 469 | 451 | 437 | 429 | 424 |
| 27 | 428 | 426 | 421 | 413 | 374 | 398 | 389 | 391 | 388 | 382 | 387 | 390 | 376 | 377 | 379 | 404 | 438 | 475 | 494 | 519 | 536 | 518 | 477 | 455 | 427 |
| 28 | 446 | 440 | 434 | 426 | 402 | 373 | 348 | 378 | 382 | 385 | 385 | 408 | 393 | 392 | 401 | 418 | 438 | 462 | 475 | 478 | 487 | 471 | 461 | 449 | 422 |
| 29 D | 437 | 434 | 432 | 428 | 418 | 397 | 408 | 416 | 416 | 402 | 395 | 460 | 427 | 406 | 431 | 443 | 458 | 497 | 519 | 498 | 487 | 479 | 448 | 432 | 440 |
| MEAN | | | | | | | | | | | | | | | | | | | | | | | | | |
| MEAN Q | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |

MEAN D

| LIV | /INGSTON | ISLAND | MAGN | ETIC | OBSER | VATOR | Y | | | | | | HORI | ZONTAL | INTEN | SITY | | | | | | | | | | |
|-----|-----------|--------|------|------|-------|-------|-----|-----|-------|------|-------|-------|-------|--------|-------|-------|-------|-----|-----|-----|-----|-----|-----|-----|-----|------|
| FEI | BRUARY 20 | 04 | | | | | | | H = 2 | 0000 | nT PI | US TA | BULAR | QUANTI | TIES | (UNIT | S nT) | | | | | | | | | |
| HOU | JR (UT) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DA | ľ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | 203 | 205 | 208 | 202 | 194 | 192 | 194 | 194 | 188 | 187 | 184 | 187 | 182 | 172 | 163 | 160 | 159 | 160 | 170 | 182 | 193 | 180 | 193 | 199 | 185 |
| 2 | | 201 | 208 | 210 | 210 | 207 | 208 | 204 | 201 | 196 | 188 | 189 | 193 | 183 | | | | | | | | | | | 204 | |
| 3 | | 199 | 208 | 202 | 208 | 190 | 193 | 206 | 195 | 187 | 181 | 180 | 179 | 181 | 175 | 164 | 163 | 164 | 169 | 171 | 180 | 192 | 192 | 192 | 201 | 186 |
| 4 | | 207 | 190 | 195 | 199 | 200 | 197 | 195 | 198 | 199 | 196 | 194 | 194 | 185 | 172 | 160 | 156 | 164 | 174 | 175 | 181 | 186 | 193 | 196 | | 187 |
| 5 | | 199 | 203 | 210 | 196 | 199 | 203 | 196 | 202 | 204 | 204 | 202 | 194 | 185 | 172 | 164 | 157 | 161 | 167 | 173 | 188 | 200 | 205 | 206 | 204 | 191 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | 202 | 207 | 206 | 206 | 204 | 198 | 209 | 190 | 190 | 185 | 190 | 206 | 194 | 178 | 157 | 146 | 144 | 155 | 156 | 168 | 190 | 201 | 199 | 202 | 187 |
| 7 | | 203 | 199 | 198 | 200 | 204 | 202 | 198 | 194 | 195 | 192 | 187 | 187 | 180 | 172 | 165 | 158 | 160 | 172 | 182 | 182 | 188 | 193 | 199 | 202 | 188 |
| 8 | Q | 201 | 204 | 205 | 206 | 203 | 198 | 197 | 198 | 197 | 196 | 196 | 196 | | | 171 | 165 | 168 | 182 | 196 | 202 | 204 | 206 | 199 | 205 | 195 |
| 9 | | 209 | 214 | 211 | 209 | 207 | 205 | 203 | 202 | 199 | 196 | 197 | 200 | 191 | 173 | 155 | 146 | 148 | 164 | 176 | 175 | 180 | 180 | 188 | | 188 |
| 10 | Q | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | D | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | D | | 183 | 185 | | 190 | | 191 | 188 | 183 | 181 | 184 | 193 | 178 | 164 | 147 | 136 | 135 | 148 | 149 | 166 | 173 | 168 | 174 | 160 | 172 |
| 14 | | 164 | 170 | 176 | 186 | 191 | 196 | 191 | 193 | 189 | 188 | 179 | 186 | 176 | 163 | 151 | 143 | 138 | 147 | 159 | 167 | 176 | 169 | 178 | 177 | 173 |
| 15 | D | 184 | 187 | 191 | 183 | 171 | 191 | 191 | 188 | 189 | 189 | 195 | 185 | 170 | 153 | 143 | 136 | 142 | 144 | 156 | 171 | 170 | 177 | 177 | 171 | 173 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | | _ | 180 | 184 | | 188 | 185 | 184 | | 188 | | 191 | 184 | 174 | | 158 | | | | | | | | 184 | 183 | 177 |
| 17 | Q | | | | 184 | | | 187 | | 190 | | | 191 | 180 | | 161 | | | 166 | | | 182 | | 178 | 174 | 179 |
| 18 | | _ | 181 | | 192 | | 200 | 201 | 198 | 194 | 194 | 193 | 191 | 183 | 170 | 157 | 149 | 147 | 163 | | | 178 | | 176 | 174 | 181 |
| 19 | | | | | 195 | | | 188 | 189 | 190 | | 188 | 182 | | | 149 | | | | 176 | 185 | 189 | 188 | 180 | 182 | 179 |
| 20 | Q | 192 | 196 | 197 | 199 | 196 | 196 | 196 | 195 | 194 | 195 | 196 | 190 | 181 | 168 | 156 | 153 | 156 | 168 | | | | | | 193 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | | | | 192 | | | | 199 | | 197 | 201 | 203 | 197 | 187 | | 162 | | | | | 188 | 198 | 205 | 195 | 195 | 189 |
| 22 | | | 196 | | 204 | | 206 | 202 | | 193 | 197 | | 196 | | | 159 | | | | | 186 | | | 192 | 197 | 187 |
| 23 | | 203 | | 209 | 211 | | 209 | 206 | 202 | 202 | 202 | 203 | 203 | | | 170 | | | | | 175 | | | | 183 | 190 |
| 24 | | | | | 196 | | 202 | 196 | 204 | 201 | 195 | 205 | 208 | | | 162 | _ | _ | | | 179 | | | 178 | 175 | 185 |
| 25 | | 187 | 192 | 194 | 197 | 199 | 200 | 197 | 197 | 194 | 193 | 194 | 198 | 192 | 184 | 170 | 161 | 156 | 165 | 173 | 181 | 189 | 193 | 191 | 187 | 187 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Q | | | 200 | | 199 | 202 | 203 | | 198 | | 198 | 205 | | | 175 | | | | | | 195 | | 205 | 204 | 191 |
| 27 | | | | 210 | | 195 | 196 | | 194 | | 198 | | 208 | | | 170 | | | | | | 191 | | 189 | 199 | 192 |
| 28 | | | | 198 | 205 | 200 | 192 | 191 | | 184 | | | 193 | | | 167 | | _ | | | | 186 | | 168 | 186 | 182 |
| 29 | D | 193 | 198 | 197 | 195 | 195 | 195 | 189 | 192 | 192 | 191 | 195 | 190 | 194 | 182 | 146 | 145 | 149 | 157 | 152 | 173 | 192 | 180 | 180 | 186 | 182 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MEZ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MEZ | AN Q | | | | | | | | | | | | | | | | | | | | | | | | | |

MEAN D

LIVINGSTON ISLAND MAGNETIC OBSERVATORY VERTICAL INTENSITY

| LIVINGSTON | | MAGI | METIC | OBSE | RVATO | RY | | | | | | | ICAL IN | | | | | | | | | | | | |
|------------|------|------|-------|------|-------|------|------|------|------|------|------|------|---------|------|------|---|------|------|------|------|------|------|------|------|--------------|
| FEBRUARY 2 | | | | | | | | | | | | | QUANTI | | | | | | | | | | | | |
| HOUR (UT) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | -134 | -134 | -136 | -132 | -126 | -127 | -126 | -124 | -119 | -118 | -116 | -116 | | | | -96 | | | | | -132 | | | | -121 |
| 2 | -135 | -135 | -133 | -133 | -128 | -129 | -125 | -113 | -109 | -106 | -104 | -107 | -107 | | | | | | | | | | | -142 | |
| 3 | -147 | -138 | -133 | -132 | -120 | -122 | -114 | -107 | -107 | -105 | -106 | -106 | -109 | -109 | -100 | -94 | -97 | -98 | -101 | -117 | -133 | -141 | -142 | -144 | -118 |
| 4 | -147 | -140 | -133 | -130 | -129 | -125 | -124 | -121 | -112 | -115 | -116 | -117 | -109 | -100 | -92 | -97 | -103 | -105 | -111 | -118 | -127 | -132 | -144 | | -119 |
| 5 | -139 | -138 | -136 | -120 | -124 | -128 | -123 | -120 | -114 | -112 | -109 | -107 | -109 | -101 | -97 | -93 | -97 | -99 | -108 | -126 | -135 | -134 | -134 | -132 | -118 |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | -130 | -131 | -128 | -126 | -124 | -117 | -105 | -100 | -116 | -116 | -111 | -102 | -106 | -102 | -96 | -90 | -89 | -94 | -101 | -116 | -134 | -142 | -142 | -139 | -115 |
| 7 | -139 | -132 | -128 | -126 | -127 | -120 | -120 | -118 | -116 | -113 | -110 | -113 | -113 | -108 | -99 | -91 | -93 | -103 | -111 | -117 | -127 | -135 | -139 | -137 | -118 |
| 8 0 | -132 | -131 | -129 | -127 | -125 | -123 | -123 | -125 | -123 | -118 | -117 | -114 | | | -102 | -94 | -90 | -97 | -109 | -122 | -126 | -134 | -125 | -128 | -118 |
| 9 | -128 | -131 | -126 | -123 | -121 | -120 | -120 | -118 | -116 | -115 | -113 | -116 | -116 | -104 | -87 | -82 | -82 | -92 | -104 | -112 | -124 | -131 | -138 | | -114 |
| 10 0 | | _ | | _ | | | | | | | _ | | | | | | | | | | | _ | | | |
| -0 Q | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 D | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 D | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 D | -155 | -144 | -139 | -129 | -120 | -119 | -123 | -127 | -121 | -114 | -118 | -128 | -121 | -112 | -98 | -93 | -94 | -101 | -103 | -125 | -149 | -154 | -164 | -154 | -125 |
| 14 | | | -141 | | | | _ | | | -123 | | | | | | -93 | | | | _ | -141 | _ | | _ | -125 |
| 15 D | | _ | -136 | | | | | | _ | -107 | | | | | | -99 | | | _ | | -136 | | | | -121 |
| 10 2 | - 10 | - 10 | | | | | | | | | ,,, | | | | | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | | | | | | | | | |
| 16 | -150 | -136 | -133 | -132 | _131 | -127 | -126 | -127 | -127 | -122 | -122 | -122 | _110 | _112 | _111 | -107 | -108 | _111 | _110 | -132 | | _1/3 | _1/3 | _130 | -126 |
| 17 Q | | | -128 | _ | _ | | | | | -130 | | | | | | -112 | | | | _ | -141 | _ | _ | | -127 |
| 18 | | | -134 | | | | | | | -127 | | | | | | -102 | | | | | -132 | | | | -125 |
| 19 | _ | _ | -135 | _ | _ | | | | | -124 | | _ | | | | -92 | | _ | _ | | -135 | _ | _ | _ | -122 |
| 20 Q | | | -130 | _ | | | | _ | | -127 | | | | | | -98 | | | | | -133 | | | | -122 |
| 20 Q | -131 | -133 | -130 | -129 | -123 | -124 | -123 | -120 | -12/ | -12/ | -12/ | -123 | -120 | -110 | -103 | -30 | -90 | -103 | | | | | | -133 | |
| 21 | _121 | _130 | -127 | _126 | | _125 | _124 | _124 | _124 | -124 | _123 | _110 | _111 | _102 | -07 | -96 | -03 | -07 | -102 | _110 | -131 | _140 | _132 | _120 | -119 |
| 22 | _ | | -128 | | | _ | | | | -118 | | | | | | -86 | | | | | | | | | -114 |
| 23 | | | -127 | | | | | | | -118 | | | | | | -93 | | | | | -131 | | | | -117 |
| 24 | | | -124 | | | | | | | -115 | | | | | | -93 -90 | | | | | -134 | | | | -116 |
| 25 | | | -127 | | _ | _ | _ | | | -121 | _ | | _ | | | -101 | | | | | -127 | | | _ | -119 |
| 25 | -135 | -129 | -12/ | -126 | -125 | -123 | -120 | -119 | -121 | -121 | -115 | -11/ | -11/ | -116 | -110 | -101 | -93 | -95 | -104 | -113 | -12/ | -135 | -136 | -126 | -119 |
| 26 Q | 100 | 106 | -126 | 105 | 101 | 101 | 120 | 116 | 117 | -118 | 116 | 120 | 117 | 111 | 104 | -98 | 00 | 00 | 0.0 | 110 | -123 | 106 | 120 | 106 | -116 |
| 26 Q 27 | | | -123 | _ | | | | | | -118 | | | | | | -98 -94 | | | | | -123 | | | | -118 |
| 28 | | | -123 | | | | | | | -118 | | | | | | -94 -92 | | | | | -121 | | | | -113 -114 |
| | | _ | | | | | | | | _ | | | | | | | | | | | | | | | |
| 29 D | -135 | -133 | -127 | -123 | -123 | -118 | -114 | -117 | -117 | -119 | -120 | -101 | -103 | -110 | -89 | -93 | -97 | -100 | -99 | -119 | -139 | -136 | -136 | -136 | -117 |
| MEAN | | _ | _ | _ | _ | | | _ | _ | | _ | _ | | _ | _ | | _ | | | _ | | _ | _ | | |
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| MEAN D | | | | | | | | | | | | | | | | | | | | | | | | | |

| | NGSTON I | | MAGN | ETIC | OBSER | VATOR | Y | | E - 2 | 5500 | ~M DT | IIC MA | | L INTEN QUANTI | | (UNIT | IС ~Ш\ | | | | | | | | | |
|------|----------|-----|------|------|-------|-------|-----|-----|-------|------|-------|--------|-----|-------------------|-----|-------|--------|-----|-----|-----|-----|-----|-----|-----|-----|------|
| HOUR | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 105 IA | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | 366 | 366 | 370 | 364 | 354 | 353 | 354 | 352 | 345 | 343 | 340 | 342 | 341 | 333 | 317 | 310 | 305 | 309 | 326 | 344 | 358 | 349 | 363 | 367 | 345 |
| 2 | | 365 | 369 | 369 | 369 | 363 | 364 | 359 | 347 | 341 | 334 | 333 | 338 | 332 | | | | | | | | | | | 373 | |
| 3 | | 374 | 371 | 364 | 367 | 346 | 350 | 350 | 339 | 334 | 329 | 330 | 329 | 332 | 329 | 316 | 310 | 313 | 317 | 320 | 338 | 359 | 365 | 366 | 372 | 342 |
| 4 | | 378 | 363 | 361 | 360 | 360 | 355 | 353 | 352 | 345 | 346 | 345 | 346 | 335 | 320 | 307 | 309 | 318 | 325 | 330 | 340 | 350 | 358 | 370 | | 345 |
| 5 | | 367 | 369 | 371 | 350 | 354 | 361 | 353 | 354 | 350 | 348 | 345 | 338 | 334 | 321 | 313 | 306 | 311 | 316 | 327 | 350 | 365 | 367 | 367 | 365 | 346 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | 361 | 366 | 362 | 360 | 358 | 349 | 344 | 330 | 343 | 341 | 339 | 341 | 337 | 325 | 308 | 297 | 296 | 306 | 312 | 331 | 359 | 371 | 370 | 369 | 341 |
| 7 | | 370 | 361 | 358 | 357 | 360 | 354 | 351 | 347 | 346 | 342 | 337 | 339 | 335 | 326 | 315 | 304 | 307 | 322 | 335 | 339 | 352 | 360 | 368 | 367 | 344 |
| 8 (| 2 | 363 | 364 | 363 | 361 | 358 | 353 | 353 | 355 | 353 | 349 | 347 | 345 | | | 321 | 311 | 309 | 323 | 341 | 355 | 359 | 367 | 355 | 362 | 348 |
| 9 | | 364 | 370 | 363 | 359 | 357 | 355 | 354 | 352 | 348 | 346 | 345 | 349 | 344 | 324 | 300 | 291 | 291 | 308 | 326 | 332 | 344 | 350 | 360 | | 341 |
| 10 (| 2 | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 11 I | D | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 I | D | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 I | D | 368 | 362 | 360 | 351 | 347 | 346 | 350 | 351 | 344 | 337 | 342 | 355 | 340 | 325 | 304 | 294 | 294 | 307 | 309 | 337 | 362 | 362 | 374 | 357 | 341 |
| 14 | | 354 | 356 | 356 | 360 | 359 | 353 | 352 | 357 | 355 | 348 | 333 | 342 | 337 | 320 | 305 | 298 | 294 | 306 | 323 | 340 | 357 | 358 | 370 | 358 | 341 |
| 15 I | D | 363 | 365 | 360 | 342 | 332 | 345 | 338 | 342 | 349 | 335 | 328 | 336 | 333 | 318 | 308 | 299 | 303 | 306 | 325 | 346 | 348 | 365 | 370 | 361 | 338 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | | 363 | 354 | 353 | 356 | 354 | 350 | 348 | 349 | 352 | 348 | 348 | 345 | 337 | 324 | 322 | 315 | 317 | 322 | 332 | 347 | | 359 | 362 | 358 | 345 |
| 17 (| 2 | 356 | 350 | 347 | 351 | 352 | 351 | 352 | 354 | 356 | 356 | 357 | 350 | 343 | 334 | 325 | 321 | 322 | 328 | 343 | 352 | 360 | 357 | 353 | 347 | 346 |
| 18 | | 348 | 351 | 355 | 358 | 358 | 359 | 359 | 357 | 355 | 355 | 354 | 351 | 341 | 327 | 315 | 309 | 307 | 327 | 352 | 362 | 349 | 355 | 350 | 351 | 346 |
| 19 | | 351 | 359 | 359 | 360 | 353 | 350 | 348 | 350 | 351 | 349 | 348 | 344 | 333 | 321 | 307 | 296 | 300 | 316 | 340 | 351 | 359 | 358 | 356 | 350 | 342 |
| 20 (| 2 | 357 | 361 | 359 | 359 | 354 | 353 | 354 | 355 | 354 | 355 | 355 | 351 | 341 | 326 | 313 | 307 | 308 | 320 | | | | | | 360 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | | 358 | 359 | 353 | 356 | | 356 | 355 | 354 | 354 | 357 | 356 | 349 | 338 | 322 | 312 | 309 | 305 | 313 | 323 | 344 | 361 | 371 | 359 | 357 | 345 |
| 22 | | 353 | 356 | 360 | 359 | 361 | 359 | 353 | 350 | 346 | 349 | 344 | 346 | 330 | 308 | 302 | 298 | 302 | 312 | 328 | 345 | | | 357 | 362 | 340 |
| 23 | | 361 | 364 | 363 | 357 | 354 | 358 | 356 | 351 | 353 | 352 | 352 | 349 | 340 | 330 | 319 | 307 | 307 | 317 | 315 | 337 | 354 | 360 | 357 | 352 | 344 |
| 24 | | 353 | 355 | 349 | 355 | 357 | 350 | 344 | 347 | 350 | 345 | 351 | 354 | 346 | 326 | 307 | 301 | 299 | 307 | 323 | 344 | 351 | 349 | 352 | 352 | 340 |
| 25 | | 357 | 355 | 355 | 356 | 356 | 354 | 351 | 350 | 350 | 349 | 345 | 349 | 345 | 340 | 327 | 314 | 306 | 312 | 324 | 336 | 352 | 360 | 361 | 351 | 344 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 (| 2 | 354 | 355 | 357 | 356 | 353 | 354 | 354 | 349 | 349 | 349 | 348 | 355 | 350 | 338 | 325 | 314 | 305 | 306 | 318 | 334 | 352 | 357 | 362 | 359 | 344 |
| 27 | | 355 | 355 | 361 | 356 | 341 | 344 | 345 | 344 | 352 | 349 | 348 | 351 | 348 | 333 | 319 | 309 | 310 | 310 | 319 | 349 | 348 | 353 | 350 | 361 | 342 |
| 28 | | 358 | 355 | 351 | 358 | 354 | 343 | 338 | 326 | 332 | 337 | 334 | 339 | 341 | 330 | 320 | 299 | 311 | 316 | 327 | 336 | 350 | 346 | 343 | 354 | 337 |
| 29 I | D | 361 | 362 | 357 | 352 | 352 | 348 | 342 | 345 | 345 | 347 | 349 | 331 | 335 | 334 | 296 | 299 | 304 | 311 | 308 | 336 | 363 | 354 | 354 | 358 | 339 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| LIVINGSTON | ISLAND | MAGN | ETIC | OBSER | VATOR | Y | | | | | | DECL | INATION | EAST | i | | | | | | | | | | |
|------------------|----------|------|------|-------|-------|-----|-----|------|-------|-------|-------|-------|----------|-------|-------|-----|-------|-----|-----|-----|-----|-----|-----|-----|------|
| MARCH 2004 | | | | | | | D = | 14 D | EGREE | S PLU | S TAE | BULAR | QUANTIT | IES (| UNITS | 0.1 | TUNIM | ES) | | | | | | | |
| HOUR (UT) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 370 | 404 | | 426 | 424 | 422 | 420 | 423 | 423 | 420 | 410 | 402 | 394 | 385 | 404 | 429 | 469 | 469 | 491 | 503 | 481 | | 465 | 370 | 430 |
| 2 D | 403 | 411 | | 393 | 393 | 405 | 416 | 424 | 451 | 425 | 407 | 403 | 393 | 390 | 415 | 435 | 450 | 463 | 477 | 479 | 479 | 433 | 419 | 432 | 424 |
| 3 | 428 | | 403 | 403 | | 419 | 420 | 420 | 412 | 404 | 428 | 428 | 407 | 405 | 407 | 424 | 450 | 475 | 487 | 475 | 461 | 439 | | | 428 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 9 Q | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 16 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | | | | | | | | | 425 | |
| 18 | 427 | | | | | | | | | 427 | 421 | 415 | 401 | 410 | 422 | 443 | 463 | 483 | 488 | 483 | 466 | 461 | 445 | 426 | |
| 19 | 379 | 406 | 418 | 428 | 425 | 425 | 420 | 426 | 425 | 421 | 423 | 414 | 394 | 395 | 399 | 423 | 451 | 471 | 472 | 466 | 456 | 438 | 430 | 424 | 426 |
| 20 | 422 | 408 | 398 | 411 | 401 | 394 | 400 | 412 | 412 | 416 | 407 | 392 | 383 | 387 | 394 | 427 | 460 | 487 | 480 | 479 | 472 | 466 | 457 | 448 | 425 |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | 422 | 412 | 407 | 391 | 407 | 416 | 425 | 410 | 409 | 411 | 426 | 437 | 416 | 401 | 411 | 434 | 471 | 491 | 497 | 484 | 468 | 446 | 440 | 432 | 432 |
| 22 | 427 | 415 | 368 | 406 | 415 | 411 | 409 | 435 | 426 | 404 | 400 | 393 | 383 | 379 | 394 | 426 | 455 | 486 | 483 | 482 | 468 | 427 | 429 | 428 | 423 |
| 23 | | | | | | | | | 424 | | 415 | 403 | 389 | 388 | 400 | 423 | 454 | 474 | 483 | 477 | | 437 | | | |
| 24 Q | | 427 | 426 | | | | | | | | | 403 | 388 | 382 | 391 | 419 | 451 | 469 | 476 | 470 | 456 | 440 | 431 | 428 | |
| 25 Q | 428 | 429 | 427 | 423 | 418 | 410 | | | | | | | | | | | | | | | | | | | |
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| 26 | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 29 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | | | | | | | 412 | 421 | 414 | 419 | 430 | 451 | 403 | 399 | 423 | 433 | 455 | 478 | 481 | 467 | 446 | 437 | 430 | 424 | |
| 21 | 406 | 404 | 41.0 | 411 | 401 | | | | | | | | | | | | | | | | | | | | |
| 31 | 426 | 424 | 416 | 411 | 421 | | | | | | | | | | | | | | | | | | | | |
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| LIVINGSTON | ISLAND | MAGN | ETIC | OBSER | VATOR | Y | | 2000 | 0 -m | DI IIG | ma Diii | | ONTAL | | | т. | | | | | | | | | |
|---------------|--------|------|------|-------|-------|-----|----------|------|-----------|--------|---------|--------|--------------|-------------|-----|------|-------|-----|-----|------|-----|------|-----|-----|------|
| | ^ | 1 | 2 | 3 | 4 | _ | н = 6 | 7 | 0 nr 8 | | 10 | AR QUA | NTITIE 12 | 5 (UN 13 | | • | 16 | 17 | 10 | 10 | 20 | 21 | 22 | 22 | MEAN |
| HOUR (UT) | 0 | Т | 2 | 3 | 4 | 5 | ь | , | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DAY | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 104 | 100 | 100 | 100 | 104 | 100 | 100 | 150 | 1.40 | 1.40 | 1-1 | 156 | 1.00 | 174 | 1.00 | 170 | 100 | 101 |
| 1 2 D | 198 | | 189 | | 197 | | | 194 | 196 | 188 | 192 | 194 | 193 | 183 | 158 | 140 | _ | 151 | | | 174 | | | | 181 |
| | | | | 196 | | | 188 | 184 | 183 | | 188 | 188 | | 173 | | | 148 | 160 | | | 186 | | | 188 | 178 |
| 3 | 193 | 196 | 191 | 192 | 188 | 191 | 193 | 192 | 191 | 189 | 190 | 194 | 181 | 1/3 | 128 | 148 | 150 | 15/ | 160 | 16/ | 187 | 191 | | | 181 |
| 4 5 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 6 Q 7 O | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 Q 8 O | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 Q 9 D | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 D 10 D | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 11 D | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 D 12 D | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 14 15 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | | | | | | | | | 173 | |
| 18 | 168 | | | | | | | | | 185 | 187 | 185 | 175 | 164 | 154 | 149 | 152 | 166 | 172 | 175 | 167 | | | 173 | |
| 19 | | | | 182 | | | 101 | 187 | 189 | 191 | 196 | 200 | 192 | | _ | 157 | | 160 | 169 | | 176 | | 187 | | 179 |
| 20 | | | | 183 | | 205 | | | | | | 193 | | | | 149 | | | | _ | 178 | | | | 179 |
| 20 | 191 | 102 | 1/2 | 103 | 196 | 205 | 191 | 191 | 190 | 192 | 193 | 193 | 101 | 100 | 136 | 149 | 140 | 133 | 107 | 1/3 | 1/6 | 101 | 104 | 165 | 179 |
| 21 | 172 | 170 | 100 | 190 | 100 | 100 | 107 | 194 | 194 | 10/ | 189 | 193 | 100 | 172 | 1/0 | 143 | 120 | 150 | 157 | 160 | 168 | 176 | 101 | 105 | 177 |
| 22 | | | | 183 | | | 198 | 204 | 201 | | | 193 | | | | 147 | | | | | 179 | | | | 180 |
| 23 | | | | | | | | | 186 | | 185 | 182 | 173 | | | 152 | _ | 159 | | | | | | | |
| 24 0 | | 187 | | | | | | | | | | 188 | _ | | | 148 | | | | | 192 | | | 196 | |
| 25 Q | | | | 196 | | | | | | | | | | | | 140 | | | | | | | | | |
| 23 Q | 191 | 193 | 195 | 190 | 190 | 193 | | | | | | | | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | | | | | | | 185 | 189 | 183 | 182 | 186 | 187 | 183 | 157 | 137 | 137 | 1 / 1 | 152 | 164 | 175 | 182 | 183 | 194 | 185 | |
| 50 | | | | | | | 100 | 103 | 103 | 102 | 100 | 107 | 103 | 13, | 13, | 13, | | 132 | 104 | 1,3 | 102 | 103 | 101 | 103 | |
| 31 | 185 | 185 | 187 | 186 | 187 | | | | | | | | | | | | | | | | | | | | |
| J± | 103 | 100 | 107 | 100 | 107 | | | | | | | | | | | | | | | | | | | | |
| MEAN | | | | | | | | | | | | | | | | | | | | | | | | | |
| MEAN O | | | | | | | | | | | | | | | | | | | | | | | | | |
| MEAN D | | | | | | | | | | | | | | | | | | | | | | | | | |
| minn D | _ | _ | _ | _ | _ | | _ | - | _ | _ | _ | | _ | _ | _ | _ | _ | | _ | - | | _ | _ | | |

| LIVINGSTON | ISLAN | D MAGI | NETIC | OBSER | RVATOF | RY | | | | | | VERT | ICAL IN | ITENSI | TY | | | | | | | | | | |
|-------------------|-------|--------|-------|-------|--------|------|------|-------|-------|------|-------|--------|---------|--------|--------|------------|------|------|------|------|------|------|------|------|------|
| MARCH 2004 | | | | | | | z = | -2950 | 00 nT | PLUS | TABUI | LAR QU | ANTITIE | S (UN | NITS r | nT) | | | | | | | | | |
| HOUR (UT) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | _ | -126 | | _ | | | -118 | | | | | | | _ | | -85 | | | | -116 | | _ | | _ | -116 |
| 2 D | | -126 | | | | | -118 | | | _ | | | | _ | | -95 | | | | -123 | | | | _ | -119 |
| 3 | _ | -131 | | _ | | | -119 | | | _ | | | | | | -96 | | | | -120 | | | | | -116 |
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| 11 D | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 D | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 17 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | -120 | | | | | -107 | | _ | | -123 | | | | _ | |
| 19 | | -124 | | | | _ | | | | | -119 | | | | | -99 | | | _ | -122 | _ | | | | -119 |
| 20 | -126 | -124 | -120 | -122 | -123 | -114 | -113 | -117 | -116 | -117 | -116 | -117 | -112 | -106 | -102 | -95 | -93 | -96 | -110 | -117 | -124 | -128 | -128 | -130 | -115 |
| 21 | _127 | -125 | _120 | _122 | _122 | _120 | -116 | _110 | _116 | _116 | _100 | _110 | _111 | _10E | -03 | -93 | -00 | -100 | _100 | -121 | _126 | _122 | _120 | _127 | -115 |
| 22 | | -124 | | _ | | | | | _ | _ | -117 | | | | | -93 -91 | | | | -121 | | _ | | | -115 |
| 23 | | | | | | | | | | _ | -117 | | | | | -98 | | | | -116 | | | _ | | |
| 24 0 | | -122 | | | | | | | | | | | | | | -97 | | | | -118 | | _ | | | |
| 25 0 | | -115 | | | | | | | | | | | | | | | | | | | | | | | |
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| 30 | | | | | | | -104 | -106 | -109 | -111 | -108 | -100 | -111 | -104 | -95 | -104 | -105 | -107 | -116 | -125 | -130 | -128 | -125 | -124 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 31 | -122 | -120 | -118 | -115 | -114 | | | | | | | | | | | | | | | | | | | | |
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| MEAN Q | | | | | | | | | | | | | | | | | | | | | | | | | |
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| LIVINGSTON | ISLAND | MAGN | ETIC | OBSER | VATOR | Y | _ | 2550 | | DT | | | INTEN | | | | | | | | | | | | |
|------------|--------|------|------|-------|-------|-----|-----|------|-----|-----|-----|-----|--------|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|------|
| MARCH 2004 | | _ | _ | _ | _ | _ | | | | | | | NTITIE | | | | | | | | | | | | |
| HOUR (UT) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 365 | 353 | 348 | 353 | 351 | 346 | 346 | 345 | 343 | 333 | 343 | 345 | 347 | 337 | 309 | 289 | 292 | 307 | 334 | 332 | 343 | 345 | 352 | 363 | 338 |
| 2 D | 347 | 340 | 351 | 353 | 349 | 346 | 344 | 341 | 328 | 340 | 346 | 346 | 343 | 331 | 309 | 299 | 307 | 321 | 334 | 343 | 355 | 347 | 358 | 357 | 339 |
| 3 | 357 | | 352 | | 345 | 346 | 348 | | 346 | _ | 335 | 340 | 331 | - | 315 | 303 | 305 | 314 | 319 | 333 | 358 | 360 | | | 338 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 11 D | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 D | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 16 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | | | | | | | | | 343 | |
| 18 | 337 | | | | | | | | | 344 | 345 | 341 | 333 | 323 | 315 | 313 | 314 | 328 | 336 | 340 | 336 | 336 | 344 | 349 | |
| 19 | 335 | 335 | 339 | 351 | 353 | 353 | 347 | 344 | 346 | 347 | 349 | 352 | 346 | 334 | 318 | 311 | 309 | 317 | 329 | 340 | 343 | 349 | 351 | 354 | 340 |
| 20 | 352 | 345 | 337 | 344 | 352 | 350 | 341 | 345 | 344 | 345 | 345 | 345 | 335 | 322 | 314 | 304 | 301 | 306 | 326 | 334 | 343 | 348 | 350 | 352 | 337 |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | 343 | 344 | 354 | 349 | 349 | 346 | 348 | 342 | 345 | 345 | 337 | 340 | 338 | 324 | 301 | 297 | 293 | 307 | 318 | 336 | 339 | 349 | 350 | 349 | 335 |
| 22 | 350 | 344 | 334 | 342 | 348 | 351 | 349 | 347 | 346 | 341 | 346 | 345 | 337 | 324 | 309 | 298 | 305 | 310 | 325 | 344 | 346 | 346 | 351 | 341 | 337 |
| 23 | | | | | | | | | 340 | | 341 | 341 | 334 | 323 | 313 | 307 | 306 | 311 | 325 | 334 | | 342 | | | |
| 24 Q | | 346 | 346 | | | | | | | | | 341 | 336 | 325 | 311 | 304 | 306 | 315 | 331 | 343 | 351 | 352 | 351 | 350 | |
| 25 Õ | 349 | 345 | 343 | 344 | 345 | 344 | | | | | | | | | | | | | | | | | | | |
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| 29 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | | | | | | | 331 | 334 | 333 | 334 | 335 | 329 | 335 | 315 | 296 | 304 | 307 | 315 | 328 | 342 | 350 | 350 | 348 | 347 | |
| 30 | | | | | | | 331 | 551 | 555 | 551 | 333 | 323 | 333 | 313 | | 501 | 30. | 313 | 320 | J 12 | 550 | 550 | 3.0 | 51. | |
| 31 | 345 | 343 | 344 | 340 | 340 | | | | | | | | | | | | | | | | | | | | |
| J_ | 343 | 543 | 211 | 2 10 | 240 | | | | | | | | | | | | | | | | | | | | |
| MEAN | | | | | | | | | | | | | | | | | | | | | | | | | |
| MEAN O | | | | | | | | | | | | | | | | | | | | | | | | | |
| MEAN D | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | VINGSTON | ISLAND | MAGN | ETIC | OBSER | VATOR | ĽΥ | _ | | | | | _ | INATION | | | | | | | | | | | | |
|----------|----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| | RIL 2004 | • | | • | _ | | - | | | | | | | QUANTIT | | | | | • | 10 | 10 | 00 | 0.1 | 00 | 00 | |
| | JR (UT) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DA: | 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | ~ | | | | | | | | | | | | | | | | | | | | | | 428 | 425 | 423 | |
| | D D | 423 | 421 | 400 | 358 | 382 | 401 | 415 | 399 | 411 | 408 | 396 | 415 | 392 | 402 | 396 | 444 | 479 | 539 | 574 | 539 | 525 | 522 | 538 | 512 | 446 |
| 4 | ט | 526 | 459 | 402 | 430 | 438 | 439 | 413 | 439 | 439 | 434 | 427 | 415 | 403 | 402 | 411 | 427 | 451 | 466 | 474 | 467 | 450 | 437 | 430 | 426 | 439 |
| _ | D | 425 | 423 | 424 | 423 | 422 | 422 | 414 | 413 | 416 | 420 | 423 | 412 | 400 | 395 | 412 | 458 | 467 | 490 | 531 | | 544 | _ | 476 | | 444 |
| 3 | Ь | 423 | 423 | 424 | 423 | 422 | 422 | 414 | 413 | 410 | 420 | 423 | 412 | 400 | 393 | 412 | 430 | 407 | 490 | 331 | 300 | 244 | 490 | 4/0 | 390 | 444 |
| 6 | D | 423 | 369 | 353 | 394 | 387 | 330 | 353 | 424 | 428 | 441 | 478 | 455 | 446 | 427 | 422 | 437 | 457 | 473 | 480 | 471 | 441 | 434 | 382 | 403 | 421 |
| 7 | | 425 | 417 | 386 | 393 | 410 | 401 | 405 | 436 | 438 | 419 | 419 | 419 | 410 | 414 | 421 | 434 | 455 | 473 | 472 | 461 | 407 | 418 | 444 | 384 | 423 |
| 8 | | 417 | 433 | 431 | 408 | 373 | 405 | 416 | | | | | | | | 425 | 455 | 464 | 480 | 475 | 461 | 440 | 413 | 411 | 429 | |
| 9 | D | 428 | 416 | 393 | 348 | 331 | 405 | 423 | 426 | 447 | 416 | 409 | 408 | 403 | 406 | | | | | | | 442 | 444 | 435 | 428 | |
| 10 | | 427 | 424 | 411 | 367 | 388 | 394 | 401 | 415 | 425 | 403 | 412 | 406 | 399 | 397 | 408 | 427 | 444 | 456 | 459 | 450 | 441 | 445 | 443 | 412 | 419 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | | 414 | 390 | 391 | 408 | 406 | 409 | 434 | 431 | 416 | | | | 410 | 405 | 411 | 433 | 455 | | | | | | | | |
| 12 | | | | | | | | | 424 | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | 416 | | | 413 | 433 | 446 | 454 | 453 | 446 | 435 | 429 | 425 | 427 | |
| 14 | | 427 | 422 | 398 | 392 | 411 | 415 | 420 | 424 | 425 | 425 | 422 | 413 | 396 | 390 | 402 | 427 | 452 | 461 | 454 | 442 | 432 | 428 | 426 | 423 | 422 |
| 15 | | 421 | 417 | 417 | 416 | 412 | 420 | 423 | 421 | 422 | 421 | 413 | 402 | 393 | 386 | 400 | 426 | 448 | 460 | 461 | 460 | 455 | 444 | 387 | 427 | 423 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | | 409 | 418 | 419 | 412 | 408 | 364 | 343 | 373 | 407 | 454 | 433 | 430 | 428 | | 417 | | | 458 | 472 | 465 | 438 | | 437 | 413 | 422 |
| 17 | | 410 | 420 | 418 | 408 | 403 | 395 | 404 | 418 | 423 | 422 | 415 | 409 | 397 | 399 | 408 | | 453 | 469 | 479 | 465 | | 439 | 424 | 414 | 424 |
| 18 | | 415 | 419 | 418 | 410 | 405 | 383 | 389 | 420 | 448 | 408 | 413 | 408 | 400 | 416 | 422 | 435 | 454 | 466 | 472 | 467 | 450 | 443 | 431 | 438 | 426 |
| 19 | | 411 | 368 | 393 | 397 | 386 | 382 | 412 | 419 | 417 | 423 | 424 | 413 | 399 | 401 | 412 | _ | | 459 | 457 | 447 | 437 | 432 | 428 | 424 | 417 |
| 20 | Q | 405 | 405 | 412 | 402 | 405 | 412 | 416 | 415 | 410 | 422 | 413 | 404 | 392 | 393 | 411 | 435 | 453 | 456 | 445 | 433 | 426 | 425 | 427 | 428 | 419 |
| | | 400 | | 400 | 44.0 | | | | | | 44.0 | 400 | 400 | 226 | | | | | 450 | 450 | | 404 | 400 | 400 | 405 | 400 |
| 21 | _ | 428 | 424 | | 418 | 389 | 388 | 414 | 413 | 414 | 412 | 409 | 408 | 396 | 397 | 408 | | 451 | | 453 | | 431 | | 429 | 425 | 420 |
| 22 | - | 421 | 421 | 420 | 420 | 419 | 417 | 414 | 410 | 408 | 407 | 406 | 401 | 393 | 401 | 411 | 429 | 447 | 453 | 455 | 439 | 434 | 428 | 426 | 426 | 421 |
| 23 | ט | 424 437 | 418 428 | 421 421 | 405 422 | 403 416 | 405 415 | 401 | 403 | 398 415 | 426 400 | 394 388 | 395 417 | 390 | 447 | 455 428 | 451 437 | 456 459 | 464 | 468 | 459 | 457 437 | 471 436 | 455 431 | 453 429 | 430 424 |
| 24 25 | | 423 | | 419 | 404 | 364 | 356 | 405 373 | 402 385 | 393 | 378 | 397 | | 399 405 | 399 399 | 428 | _ | 441 | 458 451 | 457 454 | 443 449 | | | 431 | | 412 |
| 25 | | 423 | 421 | 419 | 404 | 304 | 336 | 313 | 363 | 393 | 376 | 391 | 412 | 405 | 399 | 409 | 423 | 441 | 431 | 434 | 449 | 443 | 433 | 431 | 420 | 412 |
| 26 | | 425 | 419 | 410 | 399 | 412 | 415 | 427 | 419 | 424 | 424 | 421 | 415 | 405 | 402 | 410 | 426 | | 442 | 445 | 433 | 430 | | | | 421 |
| 27 | | | | | | | | | | | | | 406 | | | | | | | 448 | | | | | | |
| 28 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 29 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | Z. | | | | | 362 | 350 | 400 | 418 | 412 | 421 | 419 | 413 | 405 | 405 | 415 | 434 | 446 | 443 | 435 | 435 | 447 | 442 | 468 | 442 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MEZ | AN | | | | | | | | | | | | | | | | | | | | | | | | | |
| | AN Q | | | | | | | | | | | | | | | | | | | | | | | | | |
| | AN D | 425 | 410 | 398 | 385 | 385 | 393 | 401 | 413 | 420 | 422 | 420 | 417 | 406 | 415 | 420 | | | | | 501 | 482 | 473 | 457 | 437 | 431 |
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| | /INGSTON | ISLAND | MAGN | ETIC | OBSER | VATOR | ĽΥ | | | | | | | ONTAL | | | | | | | | | | | | |
|-----|--------------|--------|------|------|-------|-------|-----|------|------|------|-----|-----|--------|-------|------|------|------|------|-----|-------|-------|-------|-----|-----|-----|------|
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| DA | ľ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Q | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Q | | | | | | | | | | | | | | | | | | | | | | 191 | 191 | 191 | |
| 3 | D | 192 | 195 | 191 | 181 | 177 | 189 | 195 | 183 | 181 | 188 | 193 | 197 | 191 | 176 | 165 | 146 | 148 | 137 | 132 | 133 | 145 | 156 | 114 | 114 | 167 |
| 4 | | 88 | 129 | 129 | 140 | 148 | 151 | 152 | 156 | 154 | 158 | 159 | 161 | 162 | 156 | 145 | 142 | 141 | 151 | 163 | 173 | 179 | 179 | 180 | 185 | 153 |
| 5 | D | 183 | 183 | 185 | 188 | 189 | 191 | 191 | 191 | 192 | 192 | 192 | 190 | 184 | 167 | 149 | 147 | 151 | 142 | 127 | 115 | 134 | 144 | 132 | 144 | 167 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | D | 138 | 135 | 172 | 165 | 174 | 194 | 171 | 177 | 171 | 177 | 171 | 178 | 156 | 153 | 137 | 131 | 136 | 140 | 149 | 149 | 147 | 157 | 155 | 163 | 158 |
| 7 | | 161 | 167 | 169 | 161 | 170 | 192 | 175 | 172 | 176 | 177 | 175 | 171 | 170 | 160 | 154 | 148 | 147 | 156 | 165 | 165 | 153 | 159 | 161 | 158 | 165 |
| 8 | | 157 | 169 | 175 | 183 | 192 | 175 | 191 | | | | | | | | 144 | 139 | 148 | 160 | 165 | 170 | 170 | 167 | 169 | 179 | |
| 9 | D | 181 | 178 | 185 | 177 | 188 | 179 | 187 | 194 | 200 | 189 | 179 | 177 | 170 | 161 | | | | | | | 173 | 172 | 174 | 179 | |
| 10 | | 182 | 183 | 188 | 188 | 180 | 177 | 180 | 175 | 185 | 179 | 178 | 177 | 169 | 156 | 148 | 144 | 149 | 161 | 171 | 175 | 166 | 158 | 165 | 170 | 171 |
| | | | | | | | | | | | | | | | | | | | | | _ | | | | | |
| 11 | | 175 | 160 | 155 | 174 | 181 | 184 | 186 | 188 | 184 | | | | 174 | 165 | 152 | 148 | 147 | | | | | | | | |
| 12 | | | | | | | | | 187 | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | 183 | | | 163 | 161 | 164 | 171 | 176 | 173 | 177 | 180 | 176 | 177 | |
| 14 | | 178 | 181 | 181 | 183 | 183 | 182 | 184 | 183 | 182 | 183 | 184 | | | | | | 160 | | 173 | 175 | | 175 | 177 | 181 | 177 |
| 15 | | 180 | | | 184 | | | 187 | 189 | | | 195 | | 185 | | | | 160 | | _ | | 178 | | | | 178 |
| | | 100 | 103 | 100 | 104 | 101 | 103 | 107 | 103 | | 133 | 100 | 172 | 100 | 1,3 | 102 | 100 | 100 | -00 | - / - | 1,1 | 1,0 | 107 | 130 | 1,0 | 1,0 |
| 16 | | 183 | 184 | 100 | 101 | 194 | 105 | 190 | 188 | 182 | 178 | 176 | 172 | 167 | 163 | 157 | 1/1 | 145 | 151 | 161 | 162 | 155 | 166 | 171 | 165 | 172 |
| 17 | | | | | 179 | | 196 | 184 | | 183 | | | 179 | | | _ | | 150 | _ | | 168 | | | 173 | | 173 |
| 18 | | 178 | | | | 183 | 191 | 180 | | 190 | | | 179 | | | | | 150 | | | | 172 | | _ | | 173 |
| 19 | | 168 | | | 172 | | 175 | 176 | 183 | | 182 | | 180 | | | 155 | _ | | 166 | | 177 | 180 | | 180 | | 173 |
| | Q | 180 | | | 185 | | 187 | 186 | 188 | | | 184 | | 177 | | | _ | 159 | | | 190 | | | 187 | | 180 |
| 20 | Q | 100 | 103 | 163 | 165 | 100 | 107 | 100 | 100 | 104 | 103 | 104 | 103 | 1// | 100 | 136 | 130 | 139 | 1/2 | 102 | 190 | 109 | 100 | 10/ | 103 | 100 |
| 21 | | 185 | 188 | 188 | 191 | 105 | 182 | 185 | 185 | 186 | 186 | 188 | 187 | 184 | 174 | 164 | 155 | 158 | 171 | 178 | 175 | 182 | 182 | 186 | 184 | 181 |
| 22 | Q | 187 | | | 189 | | 189 | 191 | 190 | | 191 | | 189 | 180 | | | | 164 | | | 183 | | | 191 | | 184 |
| 23 | ~ | | | | 196 | | 191 | 193 | | 193 | 195 | | 184 | | | | | 147 | | | | 169 | | | | 175 |
| 24 | Ъ | | | | 179 | | 181 | | 174 | | | 187 | | | | | | 159 | | | | 176 | | | | 174 |
| 25 | | | | | 190 | | | 178 | 186 | | 196 | | 172 | 169 | | | | 154 | | | | 172 | | | | 175 |
| 23 | | 103 | 102 | 102 | 190 | 1/9 | 109 | 1/6 | 100 | 211 | 196 | 104 | 1/2 | 109 | 163 | 157 | 130 | 134 | 100 | 101 | 167 | 1/2 | 1/6 | 1/2 | 107 | 1/5 |
| 26 | | 176 | 101 | 177 | 177 | 170 | 180 | 185 | 185 | 178 | 170 | 179 | 170 | 174 | 165 | 156 | 150 | | 171 | 177 | 176 | 179 | | | | 175 |
| 27 | | 176 | 101 | 1// | 1// | 1/9 | 100 | 165 | 165 | | | | 187 | 1/4 | 165 | | 152 | | | | | | | | | |
| 28 | | | | | | | | | | | | | 10/ | | | | | | | 1/6 | | | | | | |
| | 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 29 | Q | | | | | 175 | 170 | 1.05 | 170 | 100 | 174 | 175 | 176 | 172 | 1.07 | 1.00 | 1.00 | 1.00 | 176 | 100 | 100 | 150 | 100 | 101 | 157 | |
| 30 | | | | | | 175 | 170 | 165 | 178 | 180 | 1/4 | 175 | 1/6 | 173 | 167 | 162 | 162 | 166 | T/6 | 183 | 189 | 158 | 123 | 131 | 15/ | |
| MEZ | N NT | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | AN Q AN D | 170 | 170 | 105 | 101 | 100 | 100 | 107 | 100 | 107 | 100 | 105 | 105 | 175 | 164 | 150 | | | | | 1 4 4 | 1 = 4 | 157 | 146 | 152 | |
| MEA | AN D | T \ 8 | T 18 | 182 | 181 | 197 | TRA | 18/ | 188 | TR \ | TAR | 185 | 182 | 1/2 | 104 | 152 | | | | | 144 | 154 | 12/ | 140 | 123 | 169 |

| LIVINGSTON | ISLAND | MAG | NETIC | OBSEE | RVATO | RY | | | | | | VERT | ICAL IN | TENS | ITY | | | | | | | | | | |
|------------------|--------------|------|-------|-------|-------|------|------|------|-------|------|-------|--------|---------|-------|--------------|------|------|------|------|------|--------------|------|------|------|----------|
| APRIL 2004 | | | | | | | z = | 2950 | 00 nT | PLUS | TABUI | LAR QU | ANTITIE | S (UI | NITS 1 | aT) | | | | | | | | | |
| HOUR (UT) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 Q | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 Q | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 D | -113 | | _ | | | | | | | | -111 | | | | -95 | | | | | | -139 | | | _ | -108 |
| 4 | -168 | | _ | _ | | | | | | | -129 | | | _ | -116 | | | | _ | | -125 | _ | | | -127 |
| 5 D | -119 | -118 | -118 | -118 | -117 | -117 | -116 | -116 | -115 | -114 | -112 | -113 | -113 | -107 | -99 | -98 | -105 | -102 | -96 | -106 | -141 | -144 | -141 | -143 | -116 |
| | | | | | 100 | 100 | | | | | | | | | | | | 100 | | | | | | 4.00 | |
| 6 D 7 | -136 | | _ | | | | | | | | -94 | | | | -109 | | | | | _ | -129 | _ | | | -115 |
| 8 | -125 | | | | | | | | | | -116 | | | | -110 -103 | | | | | | -129 | | | | -117 |
| 8 9 D | -118 -124 | | | | | | | | | | -106 | | | | -103 | | | | _ | _ | -128 -129 | | _ | | |
| 9 Б 10 | -124 -123 | | | | | | | | | | -112 | | | | -109 | | | | | | -129 | | | _ | -113 |
| 10 | -123 | -120 | -120 | -111 | -105 | -107 | -103 | -100 | -107 | -109 | -112 | -110 | -11/ | -113 | -109 | -105 | -106 | -109 | -115 | -121 | -120 | -115 | -120 | -12/ | -113 |
| 11 | -124 | _110 | _11/ | _120 | _121 | _117 | _111 | _111 | _111 | | | | _115 | _112 | -107 | -101 | -00 | | | | | | | | |
| 12 | | | -114 | | | | | | | | | | _ | | -107 | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | -107 | | | | | | -116 | | | | |
| 14 | -115 | | | | | | | | | | -111 | | | | -103 | | | | | _ | -118 | | | | -111 |
| 15 | -116 | | _ | | | | | | | | -112 | _ | _ | | -101 | | | | _ | | -115 | | | | -111 |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | -121 | -119 | -119 | -117 | -111 | -99 | -85 | -75 | -76 | -87 | -104 | -106 | -108 | -111 | -107 | -98 | -103 | -108 | -113 | -115 | -118 | -121 | -123 | -122 | -107 |
| 17 | -122 | -121 | -120 | -117 | -108 | -102 | -105 | -109 | -110 | -108 | -108 | -110 | -113 | -109 | -106 | -100 | -101 | -106 | -114 | -116 | -117 | -118 | -121 | -119 | -112 |
| 18 | -118 | -118 | -117 | -116 | -113 | -107 | -100 | -103 | -95 | -102 | -107 | -110 | -109 | -107 | -103 | -100 | -97 | -104 | -108 | -114 | -122 | -120 | -117 | -118 | -109 |
| 19 | -121 | -117 | -115 | -117 | -116 | -111 | -111 | -112 | -112 | -113 | -113 | -113 | -112 | -106 | -103 | -102 | -105 | -108 | -111 | -117 | -118 | -117 | -115 | -113 | -112 |
| 20 Q | -114 | -114 | -113 | -112 | -110 | -110 | -108 | -107 | -106 | -106 | -111 | -113 | -112 | -106 | -98 | -96 | -103 | -110 | -116 | -120 | -116 | -113 | -111 | -108 | -110 |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | -108 | -110 | -109 | -110 | -110 | -100 | -105 | -107 | -107 | -108 | -109 | -108 | | | -103 | | | | -116 | -113 | -117 | -114 | -115 | -112 | -109 |
| 22 Q | -111 | | | | | | -108 | -107 | -106 | -107 | -106 | -108 | -106 | -103 | -100 | -99 | -102 | -110 | -115 | -117 | -117 | -116 | -113 | -110 | -109 |
| 23 D | -111 | | | | | | | | | | -93 | | | | -95 | | | | | | -119 | | | | -105 |
| 24 | -124 | | | | | | | | | | -109 | | | | -92 | | | | | | -118 | | | | -111 |
| 25 | -114 | -113 | -112 | -114 | -103 | -102 | -98 | -100 | -91 | -79 | -84 | -95 | -104 | -108 | -108 | -103 | -103 | -107 | -109 | -113 | -117 | -118 | -115 | -112 | -105 |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | -115 | | _ | | | | | | | | -108 | | | | -103 | | | | | | -114 | | | | -109 |
| 27 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 29 Q | | | | | | | | | | | -108 | | | | -105 | | | | | | -102 | | | | |
| 30 | | | | | -93 | -92 | -9/ | -102 | -103 | -104 | -108 | -110 | -111 | -108 | -105 | -102 | -102 | -112 | -115 | -116 | -102 | -88 | -101 | -122 | |
| MEAN | | | | | | | | | | | | | | | | | | | | | | | | | |
| MEAN O | | | | | | | | | | | | | | | | | | | | | | | | | |
| MEAN Q MEAN D | -121 | | | | | | -100 | | | | | | | | -101 | | | | | | -132 | | | | -111 |
| THEAT D | 121 | 120 | 113 | 113 | 109 | 103 | 100 | 104 | 100 | 103 | 103 | 109 | 100 | 104 | 101 | _ | _ | - | _ | 114 | 132 | 101 | 134 | 133 | 111 |

| | VINGSTON | ISLAND | MAGN | ETIC | OBSER | VATOR | Y | п – | 2550 | О Ш | DT IIG | ma Diii | | INTEN | | .T.M.C | m) | | | | | | | | | |
|----|--------------------|--------|------|------|-------|-------|-----|----------|-------------|-----|--------|---------|--------|--------------|-------------|--------|-----|-----|-----|-----|-----|-----|-----|-------------|-----|------|
| | RIL 2004 UR(UT) | 0 | 1 | 2 | 3 | 4 | 5 | ъ = 6 | : 3550 7 | 8 | PLUS | 10 | AR QUA | NTITIE 12 | 5 (UN 13 | 14 | | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DA | • • | U | | 2 | 3 | 4 | 5 | 6 | , | • | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 10 | 17 | 10 | 19 | 20 | 21 | 22 | 23 | MEAN |
| | 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | _ | | | | | | | | | | | | | | | | | | | | | | 346 | 344 | 343 | |
| 3 | | 342 | 344 | 343 | 332 | 326 | 332 | 327 | 326 | 331 | 339 | 341 | 339 | 336 | 322 | 312 | 290 | 291 | 280 | 282 | 300 | 337 | 343 | 334 | 329 | 324 |
| 4 | _ | 329 | 334 | 322 | 338 | 340 | 338 | 334 | 335 | 332 | 336 | 336 | 337 | 338 | 330 | 318 | 312 | 305 | 313 | 325 | 338 | 344 | 343 | 342 | 347 | 332 |
| _ | D | 342 | | 342 | | 344 | 345 | 344 | 343 | 344 | 343 | | 341 | 337 | 323 | 306 | 304 | 312 | 304 | 292 | | 333 | | 331 | | 332 |
| 5 | D | 342 | 341 | 342 | 344 | 344 | 343 | 344 | 343 | 344 | 343 | 341 | 341 | 331 | 323 | 306 | 304 | 312 | 304 | 292 | 292 | 333 | 340 | 331 | 340 | 330 |
| 6 | D | 331 | 326 | 333 | 340 | 344 | 334 | 302 | 317 | 330 | 332 | 315 | 333 | 314 | 319 | 308 | 303 | 307 | 310 | 319 | 327 | 330 | 340 | 338 | 337 | 324 |
| 7 | | 335 | 338 | 334 | 327 | 334 | 345 | 331 | 329 | 334 | 336 | 335 | 332 | 332 | 322 | 317 | 313 | 312 | 320 | 332 | 336 | 333 | 335 | 336 | 332 | 330 |
| 8 | | 326 | 338 | 344 | 346 | 344 | 325 | 328 | | | | | | | | 306 | 300 | 311 | 322 | 329 | 338 | 342 | 339 | 337 | 345 | |
| 9 | D | 345 | | 343 | 330 | 324 | 312 | 332 | 336 | 328 | 323 | 329 | 334 | 330 | 325 | | | | | | | 345 | 342 | 341 | 344 | |
| 10 | Ь | 345 | _ | 345 | | 328 | 329 | 327 | 322 | 333 | 331 | | 334 | 332 | | 313 | 309 | 313 | | 331 | | 333 | _ | 332 | | 330 |
| 10 | | 343 | 343 | 343 | 336 | 320 | 329 | 321 | 322 | 333 | 331 | 333 | 331 | 332 | 321 | 313 | 309 | 313 | 321 | 331 | 339 | 333 | 324 | 33 <u>2</u> | 241 | 330 |
| 11 | | 341 | 328 | 322 | 337 | 342 | 340 | 337 | 338 | 336 | | | | 334 | 326 | 314 | 307 | 305 | | | | | | | | |
| 12 | | 341 | | | | J42 | 340 | | 327 | | | | | | | J14 | | | | | | | | | | |
| 13 | | | | | | | | | | | | | 336 | | | 321 | 317 | 321 | 328 | 334 | 333 | 336 | 341 | 335 | 336 | |
| 14 | | 336 | 339 | 338 | 334 | 334 | 332 | 333 | 331 | 331 | 333 | 335 | 338 | 338 | 329 | 315 | 309 | 314 | 323 | 333 | 337 | 337 | 336 | 336 | 340 | 332 |
| 15 | | 338 | 340 | 340 | 339 | | 334 | 338 | 340 | 340 | 341 | | 342 | | | | | 312 | | 327 | 330 | | 329 | 322 | 334 | 332 |
| 13 | | 330 | 340 | 340 | 333 | 330 | 334 | 330 | 340 | 340 | 341 | 343 | 342 | 333 | 320 | 313 | 311 | 312 | 310 | 327 | 330 | 330 | 323 | 322 | 334 | 332 |
| 16 | | 343 | 342 | 345 | 345 | 341 | 332 | 318 | 309 | 306 | 313 | 325 | 325 | 324 | 324 | 318 | 301 | 307 | 314 | 324 | 327 | 325 | 334 | 338 | 334 | 326 |
| 17 | | 337 | 339 | 340 | 338 | 339 | 335 | 330 | 332 | 334 | 334 | 332 | 332 | 333 | 323 | 315 | 304 | 309 | 317 | 330 | 331 | 332 | 335 | 338 | 335 | 330 |
| 18 | | 339 | | 342 | | 337 | 337 | 325 | 328 | 326 | 327 | 329 | 332 | 328 | 324 | 315 | 309 | 305 | 315 | 320 | 327 | 338 | 334 | 329 | | 328 |
| 19 | | 335 | 332 | 330 | 334 | 337 | 330 | 331 | 337 | 335 | 336 | 337 | 336 | 332 | 321 | 313 | 310 | 316 | 323 | 329 | 337 | 340 | 339 | 337 | 334 | 331 |
| 20 | 0 | 336 | 338 | 338 | | 336 | 336 | 335 | 335 | 332 | | 336 | 337 | 332 | 322 | 310 | 304 | | 329 | 339 | 346 | 343 | | 337 | | 332 |
| 20 | ¥ | 330 | 330 | 330 | 337 | 330 | 330 | 333 | 333 | 332 | 331 | 330 | 337 | 332 | 322 | 310 | 304 | 313 | 323 | 333 | 340 | 343 | 333 | 337 | 555 | 332 |
| 21 | | 334 | 337 | 337 | 339 | 342 | 326 | 331 | 332 | 334 | 335 | 336 | 335 | 335 | 327 | 318 | 309 | 313 | 328 | 337 | 332 | 339 | 337 | 340 | 337 | 332 |
| 22 | | 338 | 338 | 337 | 336 | 337 | 335 | 337 | 336 | 336 | 336 | 336 | 336 | 329 | 322 | 314 | 312 | 317 | 328 | 336 | 340 | 344 | 344 | 342 | 339 | 334 |
| 23 | _ | 341 | 344 | 337 | 340 | 330 | 335 | 336 | 338 | 336 | 321 | 323 | 327 | 325 | 306 | 307 | 306 | 304 | 311 | 324 | 330 | 334 | 320 | 324 | 334 | 326 |
| 24 | | 341 | 342 | | 337 | 335 | 332 | 331 | 325 | 329 | 338 | 336 | 328 | 328 | 316 | 300 | 309 | 320 | 327 | 335 | 338 | 337 | | 337 | 338 | 331 |
| 25 | | 338 | 337 | 336 | 342 | 326 | 331 | 321 | 328 | 335 | 316 | 314 | 315 | 322 | 321 | 318 | 310 | 313 | 319 | 321 | 328 | 334 | 337 | 332 | 327 | 326 |
| | | | | | | | | | | | | | | | _ | | | | | _ | | | | | | |
| 26 | | 335 | 339 | 334 | 330 | 331 | 330 | 331 | 331 | 325 | 329 | 331 | 332 | 330 | 323 | 314 | 310 | | 328 | 334 | 332 | 335 | | | | 329 |
| 27 | | | | | | | | | | | | | 332 | | | | | | | 328 | | | | | | |
| 28 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 29 | Q | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | | | | | | 316 | 312 | 313 | 327 | 327 | 324 | 328 | 331 | 329 | 324 | 319 | 316 | 321 | 332 | 338 | 343 | 314 | 283 | 298 | 330 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| ME | AN Q | | | | | | | | | | | | | | | | | | | | | | | | | |
| ME | AN D | 340 | 339 | 340 | 337 | 334 | 332 | 328 | 332 | 334 | 332 | 330 | 335 | 329 | 319 | 310 | | | | | 316 | 336 | 337 | 334 | 337 | 327 |

| LIVINGSTON | I ISLAND | MAGN | ETIC | OBSER | VATOR | Y | _ 1 | 4 | | DT | | | NATION | | | | | | | | | | | | |
|-----------------------|----------|------|------|-------|-------|-----|-------|------------|-----------|------|-------|--------|---------------|-------------|-----|---------|-----|-----|-----|-----|-----|-----|-----|-----|------|
| MAY 2004 HOUR (UT) | 0 | - | 2 | 3 | 4 | 5 | р = 1 | 4 DEG 7 | REES 8 | PLUS | TABUL | AR QUA | ANTITIE 12 | S (UN 13 | 14 | 15.1 MI | | • | 10 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DAY | 0 | 1 | 2 | 3 | 4 | 5 | 6 | , | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| 1 | 430 | 421 | 383 | 328 | 367 | 376 | 418 | 426 | 412 | 439 | 427 | 425 | 409 | 410 | 419 | 441 | 449 | 445 | 441 | 435 | 432 | 433 | 436 | 404 | 417 |
| 2 | 350 | 396 | 411 | 410 | 417 | 416 | 416 | 414 | 416 | 416 | 414 | 413 | 408 | 407 | 416 | 428 | 437 | 437 | 433 | 429 | 420 | 416 | 427 | 427 | 416 |
| 3 | 425 | 421 | 413 | 395 | 401 | 417 | 412 | 421 | 428 | 416 | 411 | 413 | 408 | 409 | 418 | 432 | 441 | 444 | 438 | 437 | 421 | 405 | 395 | 413 | 418 |
| 4 | 418 | 420 | 419 | 387 | 371 | 403 | 416 | 436 | 416 | 419 | 420 | 416 | 411 | 418 | 421 | | | | | 432 | 434 | 413 | | | |
| 5 D | | | | | | | | | | | | | | | | | | | | | | 437 | 427 | 421 | |
| _ | 400 | 222 | | | | | 44.0 | | | | | | | 44.0 | 400 | 405 | | | | 404 | 400 | | 001 | | 44.0 |
| 6 | 422 | 390 | | 415 | 417 | 414 | | _ | | | | | | 413 | | 435 | 443 | 444 | 440 | 434 | 430 | 424 | 381 | 397 | 419 |
| 7 D | 411 | 404 | 383 | 333 | 340 | 395 | 389 | 413 | 440 | | 421 | | | 417 | 435 | 451 | 466 | 461 | | 438 | 445 | | | | 418 |
| 8 | | | 405 | | 404 | 425 | 422 | | | | | | | | | | | | | 447 | _ | | | 389 | |
| 9 | 408 | 410 | 403 | 408 | 383 | 395 | 407 | _ | | | 418 | 420 | 424 | 422 | 413 | 423 | 436 | 435 | 431 | 428 | _ | 424 | 424 | 423 | 418 |
| 10 | 419 | 418 | 415 | 390 | 397 | 410 | 418 | 416 | 410 | 413 | 416 | 411 | 409 | 407 | 411 | 425 | 440 | 444 | 437 | 436 | 429 | 429 | 428 | 425 | 419 |
| 11 | 398 | 392 | 373 | 350 | 382 | | | | | 414 | 413 | 408 | 402 | 397 | 398 | 409 | 426 | 436 | 440 | | 434 | 435 | 377 | 441 | |
| 12 | 433 | 435 | 391 | 319 | 398 | 412 | 430 | 430 | 433 | 428 | 422 | 416 | 411 | | | 419 | 429 | | | | | | | | |
| 13 | | | | | 389 | 398 | 386 | 411 | 377 | 409 | 422 | 423 | 418 | 414 | 421 | 434 | 443 | 446 | 456 | 442 | 440 | 415 | 436 | 431 | |
| 14 | 424 | 414 | 400 | 385 | 379 | 384 | 419 | 429 | 428 | 423 | 420 | 415 | 407 | 411 | 421 | 431 | 439 | 438 | 432 | 427 | 422 | 418 | 419 | 421 | 417 |
| 15 | 421 | 403 | 397 | 410 | 411 | 403 | 383 | 396 | 413 | 417 | 423 | 414 | 411 | 411 | 415 | 426 | 438 | 441 | 441 | 436 | 432 | 428 | 427 | 432 | 418 |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 Q | 416 | 411 | 409 | 401 | 402 | 405 | 397 | 408 | 413 | 423 | 423 | 415 | 408 | 409 | 413 | 422 | 433 | 441 | 438 | 430 | 426 | 426 | 423 | 426 | 417 |
| 17 Q | 422 | 416 | 407 | 398 | 411 | 415 | 415 | 413 | 414 | 413 | 413 | 408 | 407 | 403 | 410 | 423 | 431 | 431 | 426 | 419 | 415 | 413 | 414 | 405 | 414 |
| 18 Q | 419 | 419 | 418 | 410 | 406 | 416 | 416 | 414 | 411 | 420 | 409 | 409 | 406 | 409 | 416 | 424 | 434 | 437 | 429 | 421 | 416 | 414 | 414 | 416 | 417 |
| 19 | 417 | 417 | 414 | 414 | 403 | 394 | 407 | 412 | 411 | 411 | 408 | 408 | 413 | 411 | 413 | 433 | 460 | 464 | 452 | 428 | 425 | 419 | 421 | 418 | 420 |
| 20 D | 418 | 419 | 418 | 416 | 412 | 408 | 398 | 380 | 392 | 377 | 409 | 394 | 406 | 411 | 418 | 428 | 439 | 439 | 437 | 430 | 441 | 431 | 440 | 433 | 416 |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | 404 | | 424 | 412 | | 413 | 409 | 396 | | 405 | _ | 419 | _ | 417 | | 429 | 432 | 436 | 435 | 428 | | 423 | 422 | 419 | 417 |
| 22 | 423 | | 420 | | 412 | 393 | | 390 | 409 | | 403 | | | 413 | | 426 | 433 | | _ | | | | 420 | 419 | 417 |
| 23 | 420 | 393 | 368 | 393 | 416 | 378 | | | | | | | | | | 417 | _ | 444 | | 436 | | 427 | | 428 | |
| 24 | 387 | 410 | 414 | 410 | 413 | 413 | 407 | | | | | | | | | | | 436 | 435 | | | | | 421 | |
| 25 | 419 | 420 | 418 | 407 | 415 | 414 | 411 | 411 | 398 | | | 413 | 414 | 413 | 416 | 424 | 433 | | | | | | | | |
| 26 Q | | | | | | | | | | | | | | | | | 435 | 438 | 434 | 426 | 418 | 415 | 413 | 413 | |
| 27 Õ | 413 | 409 | 410 | 413 | 413 | 412 | 408 | 410 | 403 | 412 | | | | | | | | | 427 | 419 | 415 | 412 | 409 | 411 | |
| 28 | 411 | 411 | 407 | 415 | 413 | 412 | 409 | 406 | 397 | 383 | 390 | 393 | 396 | 404 | 414 | 428 | 444 | 450 | 442 | 436 | 437 | | 448 | 460 | 419 |
| 29 D | 433 | 403 | 357 | 328 | 357 | 378 | 412 | 414 | 430 | 434 | 437 | 465 | | 413 | 419 | 428 | 438 | 439 | 433 | 424 | 427 | 427 | 416 | 361 | 412 |
| 30 | 401 | 395 | 408 | 413 | 414 | 401 | 410 | 412 | 415 | 421 | 437 | 432 | 428 | 422 | 418 | 423 | 434 | 431 | 435 | 443 | 447 | 443 | 442 | 433 | 423 |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 31 D | 424 | 341 | 308 | 386 | 411 | 415 | 435 | 429 | 403 | 415 | 426 | 428 | 442 | 425 | 424 | 426 | 431 | 431 | 429 | 425 | 426 | 421 | 422 | 420 | 414 |
| MEAN | | 409 | 400 | 391 | 399 | 404 | | | | | | | | | | | 438 | | | | 429 | | | | |
| MEAN O | | 409 | 400 | 391 | 409 | 404 | | | | | | | | | | | | 436 | 431 | 423 | 418 | | 415 | 111 | |
| MEAN Q MEAN D | | | | | | | | | | | | | | | | | 433 | 436 | _ | 423 | | | _ | 414 | |
| MEAN D | | | | | | | | | | | | | | | | | | | | 432 | 430 | | | | |

| | /INGSTON | ISLAND | MAGN | ETIC | OBSER | VATOR | Y | u - 2 | 0000 | nm DI | נוכ שא | חל זוום | | CONTAL | | | | | | | | | | | | |
|-----|--------------|--------|------|------|-------|-------|-----|-------|------|-------|--------|---------|-----|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| | JR (UT) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| 1 | | 167 | 170 | 163 | 162 | 157 | 161 | 172 | 177 | 179 | 176 | 172 | 171 | 172 | 171 | 164 | 163 | 162 | 166 | 169 | 170 | 171 | 168 | 166 | 160 | 168 |
| 2 | | 170 | 157 | 165 | 174 | 180 | 181 | 182 | 182 | 182 | 183 | 186 | 183 | 176 | 171 | 165 | 165 | 165 | 170 | 175 | 174 | 171 | 172 | 171 | 171 | 174 |
| 3 | | 177 | 179 | 179 | 188 | 186 | 181 | 186 | 186 | 196 | 197 | 190 | 187 | 182 | 177 | 169 | 166 | 173 | 181 | 181 | 179 | 179 | 175 | 170 | 170 | 181 |
| 4 | | 172 | | | 177 | | | | | | | 182 | | | _ | | | | | | | 174 | | | | |
| 5 | D | | | | | | | | | | | | | | | | | | | | | | 167 | 164 | 178 | |
| 6 | | | | | 181 | | | 185 | 194 | 185 | | | 185 | 175 | 168 | 159 | 157 | 162 | 172 | | | 176 | | 175 | 174 | 177 |
| 7 | D | | | | 178 | | | 188 | 171 | 180 | | 182 | 178 | 177 | 165 | 153 | 142 | 153 | 165 | | | 164 | | | | 170 |
| 8 | | | | | 180 | | | | | | | | | | | | | | | | | 164 | | | | |
| 9 | | | | _ | 182 | | | | | 182 | | | | | | | | 162 | | | | 177 | | | | 176 |
| 10 | | 174 | 177 | 179 | 182 | 175 | 176 | 182 | 183 | 181 | 179 | 181 | 183 | 183 | 180 | 173 | 167 | 166 | 170 | 174 | 172 | 171 | 173 | 174 | 171 | 176 |
| 11 | | 148 | 155 | 174 | 185 | 176 | | | | | 185 | 184 | 186 | 186 | 183 | 175 | 168 | 170 | 170 | 172 | | 175 | 173 | 136 | 139 | |
| 12 | | 138 | 143 | 145 | 139 | 149 | 165 | 168 | 171 | 173 | 178 | 177 | 180 | 179 | | | 168 | 168 | | | | | | | | |
| 13 | | | | | | 171 | 170 | 173 | 194 | 184 | 168 | 172 | 173 | 172 | 167 | 161 | 158 | 160 | 158 | 155 | 160 | 149 | 156 | 160 | 153 | |
| 14 | | | | | 166 | | | | | | | 183 | | | | | | 168 | | | | 183 | | | | 174 |
| 15 | | 183 | 152 | 147 | 162 | 169 | 169 | 170 | 167 | 169 | 173 | 179 | 181 | 179 | 173 | 166 | 161 | 163 | 167 | 171 | 170 | 169 | 167 | 161 | 155 | 168 |
| 16 | Q | 153 | 157 | 163 | 163 | 172 | 179 | 178 | 174 | 177 | 181 | 185 | 183 | 181 | 176 | 170 | 168 | 170 | 172 | 176 | 177 | 176 | 171 | 165 | 169 | 172 |
| 17 | Q | 173 | 178 | 181 | 180 | 181 | 180 | 180 | 179 | 179 | 181 | 183 | 185 | 182 | 176 | 170 | 168 | 172 | 177 | 180 | 182 | 184 | 183 | 176 | 173 | 179 |
| 18 | Q | 176 | 181 | 181 | 187 | 184 | 183 | 184 | 186 | 187 | 189 | 188 | 187 | 186 | 181 | 175 | 173 | 176 | 184 | 190 | 191 | 190 | 190 | 189 | 188 | 184 |
| 19 | | 188 | 188 | 189 | 189 | 189 | 186 | 184 | 183 | 183 | 182 | 184 | 186 | 184 | 180 | 175 | 166 | 166 | 174 | 178 | 177 | 182 | 183 | 183 | 184 | 182 |
| 20 | D | 181 | 182 | 184 | 186 | 188 | 187 | 183 | 181 | 177 | 180 | 202 | 186 | 174 | 167 | 165 | 169 | 173 | 176 | 181 | 182 | 171 | 156 | 165 | 170 | 178 |
| 21 | | 160 | 170 | 175 | 175 | 179 | 177 | 182 | 180 | 176 | 174 | 176 | 178 | 180 | 176 | 172 | 172 | 169 | 171 | 178 | 181 | 179 | 179 | 180 | 181 | 176 |
| 22 | | 181 | 181 | 182 | 180 | 181 | 181 | 178 | 178 | 184 | 180 | 179 | 174 | 179 | 178 | 174 | 171 | 172 | 177 | 178 | 180 | 180 | 180 | 178 | 180 | 179 |
| 23 | | 183 | 185 | 184 | 173 | 179 | 175 | | | | | 179 | | 184 | | 169 | 168 | 171 | 171 | 171 | 173 | 179 | 176 | 175 | 171 | |
| 24 | | 176 | 163 | 175 | 177 | 179 | 182 | 186 | | | | | | | | | | | 169 | 175 | | | | | 177 | |
| 25 | | 174 | 177 | 177 | 176 | 176 | 175 | 175 | 182 | 178 | | | 178 | 178 | 174 | 170 | 167 | 168 | | | | | | | | |
| 26 | 0 | | | | | | | | | | | | | | | | | 168 | 174 | 181 | 185 | 186 | 186 | 185 | 185 | |
| | õ | 184 | 183 | 181 | 178 | 180 | 180 | 179 | 186 | 179 | 179 | | | | | | | | | 180 | 182 | 182 | 182 | 181 | 182 | |
| 28 | ~ | 183 | 183 | 181 | 181 | 182 | 182 | 182 | 183 | 184 | 183 | 180 | 180 | 179 | 177 | 169 | 164 | 169 | 172 | 170 | 166 | 150 | 145 | 146 | 138 | 172 |
| 29 | D | 135 | 141 | 151 | 138 | 146 | 157 | 164 | 167 | 177 | 175 | 186 | 192 | 182 | 170 | 165 | 164 | 162 | 167 | 171 | 173 | 169 | 163 | 152 | 164 | 164 |
| 30 | | 149 | 156 | 164 | 173 | 176 | 177 | 174 | 177 | 181 | 184 | 198 | 187 | 189 | 175 | 170 | 168 | 172 | 174 | 173 | 156 | 151 | 146 | 134 | 148 | 169 |
| 31 | D | 157 | 161 | 184 | 159 | 168 | 172 | 187 | 181 | 184 | 174 | 176 | 178 | 177 | 177 | 177 | 173 | 175 | 177 | 177 | 176 | 164 | 168 | 168 | 169 | 173 |
| MEZ | AN | | 170 | 174 | 174 | 175 | 176 | | | | | | | | | | | 167 | | | | 173 | | | | |
| | AN O | | | | | | | | | | | | | | | | | 172 | | | | 184 | | | 180 | |
| | AN D | | | | | | | | | | | | | | | | | | | | | 168 | | | | |
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| MAY 2004 HOUR(UT) O 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 MEAN DAY 1 -126 -123 -115 -97 -97 -103 -108 -104 -102 -104 -108 -110 -114 -113 -106 -103 -105 -111 -112 -111 -112 -109 -108 -110 -10 2 -110 -107 -111 -112 -116 -115 -112 -110 -109 -107 -108 -107 -105 -104 -102 -101 -103 -107 -110 -109 -107 -106 -106 -107 -10 3 -110 -111 -110 -109 -105 -104 -108 -105 -103 -97 -98 -102 -103 -104 -104 -102 -105 -108 -108 -105 -108 -106 -104 -10 4 -104 -110 -108 -104 -100 -98 -99 -105 -102 -104 -107 -108 -101 -100 |
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| 7 D -103 -105 -99 -90 -92 -87 -91 -86 -99 -107 -104 -104 -109 -106 -100 -93 -101 -111 -113 -114 -11210 |
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| 8106 -102 -102 -100 -105 |
| |
| 9 -108 -107 -104 -102 -100 -102 -105 -107 -107 -108 -107 -104 -104 -102 -100 -98 -104 -108 -109 -110 -109 -108 -107 -10 |
| 10 -106 -107 -106 -104 -100 -101 -102 -102 -102 -102 -104 -106 -105 -104 -102 -98 -97 -101 -105 -106 -106 -107 -109 -109 -10 |
| 11 -103 -105 -111 -107 -101105 -104 -105 -105 -105 -101 -97 -98 -99 -101105 -104 -96 -96 |
| 12 -110 -118 -118 -111 -113 -119 -113 -111 -107 -108 -110 -112 -112104 -101 |
| 1399 -95 -92 -80 -82 -89 -102 -106 -108 -109 -107 -104 -102 -99 -107 -104 -111 -114 -110 |
| 14 -112 -116 -115 -111 -103 -98 -104 -107 -109 -109 -108 -109 -110 -105 -102 -100 -101 -104 -107 -107 -107 -107 -106 -104 -10 |
| 15 -103 -93 -100 -110 -112 -109 -103 -103 -105 -106 -108 -107 -107 -107 -105 -103 -104 -106 -107 -107 -106 -105 -104 -102 -10 |
| 16 Q -106 -111 -114 -111 -106 -104 -104 -106 -106 -106 -105 -107 -104 -101 -101 -101 -105 -107 -106 -103 -99 -102 -10 |
| 17 Q -106 -107 -107 -105 -105 -104 -103 -103 -103 -104 -104 -104 -103 -102 -99 -99 -99 -102 -105 -107 -107 -105 -100 -98 -10 |
| 18 Q -99 -102 -102 -102 -101 -101 -102 -102 -102 |
| 19 -98 -98 -98 -99 -99 -97 -97 -98 -98 -98 -99 -100 -99 -96 -96 -91 -90 -98 -104 -107 -108 -107 -105 -103 -9 |
| 20 D -101 -99 -100 -101 -101 -102 -97 -93 -96 -94 -88 -80 -90 -94 -96 -98 -100 -101 -106 -107 -99 -93 -100 -105 -9 |
| 21 -104 -105 -106 -105 -103 -101 -97 -94 -97 -98 -100 -101 -102 -98 -97 -97 -99 -101 -105 -106 -104 -103 -102 -103 -10 |
| 22 -101 -101 -100 -99 -100 -97 -97 -98 -91 -88 -94 -94 -98 -100 -98 -97 -97 -99 -101 -103 -103 -103 -101 -102 -9 |
| 23 -103 -102 -96 -92 -89 -9010010296 -97 -98 -97 -95 -102 -107 -104 -102 -101 |
| 24 -104 -97 -104 -103 -101 -99 -97 |
| 25 -100 -101 -99 -99 -98 -97 -97 -9699 -99 -98 -98 -97 -98 |
| 26 Q |
| 27 Q -99 -98 -98 -96 -96 -97 -96 -96 -93 -94103 -104 -103 -103 -101 -100 |
| 28 -101 -100 -97 -97 -97 -97 -97 -97 -97 -96 -94 -95 -95 -96 -94 -90 -94 -99 -98 -97 -91 -93 -97 -101 -9 |
| 29 D -108 -113 -116 -101 -103 -106 -108 -108 -104 -101 -99 -96 -96 -100 -101 -103 -102 -104 -107 -107 -104 -102 -106 -10 |
| 30 -99 -105 -109 -108 -106 -104 -102 -102 -103 -101 -97 -88 -96 -95 -98 -98 -102 -103 -100 -89 -92 -98 -102 -109 -10 |
| 31 D -114 -114 -104 -93 -105 -103 -98 -93 -97 -92 -97 -98 -94 -101 -102 -101 -102 -104 -103 -101 -94 -97 -99 -100 -10 |
| MEAN106 -106 -103 -102 -101100 |
| MEAN Q102 |
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| | VINGSTON Y 2004 | ISLAND | MAGN | ETIC | OBSER | VATOR | Y | E - 3 | EEOO | ~M DT | IIC MA | חל דווד | | L INTEN | | IC ~M\ | | | | | | | | | | |
|----|--------------------|--------|------|------|-------|-------|-----|-------|------|-------|--------|---------|-----|---------|-------------|-------------|-----|-----|-----|-----|-----|-----|------|-----|-----|------|
| | UR (UT) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| 1 | | 338 | 338 | 328 | 312 | 309 | 316 | 326 | 326 | 326 | 325 | 327 | 328 | 331 | 330 | 320 | 318 | 319 | 325 | 328 | 328 | 329 | 325 | 323 | 322 | 325 |
| 2 | | 327 | 317 | 325 | 331 | 337 | 337 | 336 | 334 | | 332 | 334 | 332 | | 323 | 317 | 316 | 319 | 325 | 330 | 329 | 325 | 325 | 325 | 326 | 328 |
| 3 | | 331 | 332 | 332 | 337 | 332 | 329 | 334 | 332 | 335 | 332 | 329 | 330 | 328 | 326 | 321 | 318 | 325 | 332 | 331 | 327 | 330 | 328 | 324 | 322 | 329 |
| 4 | | 324 | 334 | 332 | 326 | 322 | 323 | 322 | 328 | 333 | 326 | 329 | 333 | 333 | 322 | 317 | | | | | 331 | 327 | 316 | | | |
| 5 | D | | | | | | | | | | | | | | | | | | | | | | 325 | 323 | 335 | |
| 6 | | 334 | 333 | 329 | 330 | 331 | 332 | 328 | 332 | 326 | | | 331 | 324 | 321 | 314 | 312 | 317 | 327 | 331 | 327 | | 330 | 330 | 325 | 327 |
| 7 | D | 322 | 324 | _ | 315 | 313 | 307 | 322 | 308 | 324 | 331 | 329 | 327 | 330 | 321 | 309 | 298 | 310 | 325 | 326 | 327 | 325 | | | | 320 |
| 8 | | | | 335 | 325 | 325 | 327 | 332 | | | | | | | | | | | | | 328 | | | 327 | | |
| 9 | | | 324 | 327 | 329 | 325 | 321 | 323 | 328 | | | 334 | 333 | | 326 | | | 312 | | 329 | 330 | 331 | | 328 | 327 | 327 |
| 10 | | 326 | 329 | 329 | 329 | 322 | 323 | 327 | 328 | 327 | 326 | 328 | 331 | 330 | 327 | 322 | 316 | 315 | 320 | 326 | 325 | 325 | 326 | 329 | 327 | 325 |
| 11 | | 309 | 315 | 330 | 333 | 323 | | | | | 332 | 330 | 332 | 332 | 330 | 323 | 316 | 317 | 318 | 321 | | 326 | 324 | 296 | 298 | |
| 12 | | 309 | 318 | 319 | 311 | 317 | 332 | 329 | 328 | 326 | 329 | 331 | 335 | 334 | | | 321 | 319 | | | | | | | | |
| 13 | | | | | | 318 | 315 | 314 | 316 | 312 | 309 | 321 | 326 | 327 | 325 | 320 | 316 | 317 | 314 | 310 | 319 | 310 | 320 | 325 | 318 | |
| 14 | | 321 | 329 | 330 | 326 | 319 | 317 | 323 | 327 | 331 | 333 | 333 | 335 | 334 | 326 | 319 | 316 | 319 | 325 | 329 | 330 | 332 | 333 | 331 | 327 | 327 |
| 15 | | 329 | 303 | 306 | 323 | 329 | 326 | 322 | 319 | 323 | 325 | 330 | 331 | 330 | 326 | 321 | 316 | 318 | 323 | 325 | 325 | 323 | 322 | 317 | 312 | 322 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Q | 314 | 321 | 327 | 325 | 329 | 329 | 327 | 325 | 328 | 330 | 332 | 331 | 331 | 326 | 320 | 319 | 320 | 321 | 326 | 328 | 327 | 322 | 315 | 320 | 325 |
| | Q | 325 | 329 | 331 | 329 | 330 | 328 | 327 | 326 | 326 | 328 | 329 | 331 | 328 | 324 | 318 | 317 | 320 | 324 | | 332 | 332 | 331 | 322 | 319 | 326 |
| | Q | 321 | 327 | 327 | 330 | 327 | 327 | 328 | 329 | 330 | 329 | 328 | 328 | 328 | 324 | 320 | 320 | 322 | 330 | | 335 | 334 | | 329 | 327 | 328 |
| 19 | | 327 | 327 | 328 | 329 | 329 | 325 | 324 | 325 | 324 | 324 | 326 | 328 | 326 | 321 | 319 | 309 | 308 | 320 | 327 | 329 | | 332 | 330 | 329 | 325 |
| 20 | D | 326 | 325 | 327 | 329 | 330 | 330 | 324 | 319 | 320 | 320 | 327 | 312 | 313 | 312 | 313 | 316 | 320 | 323 | 330 | 331 | 319 | 305 | 316 | 323 | 321 |
| 21 | | 317 | 323 | 327 | 325 | 326 | 323 | 324 | 319 | 319 | 319 | 322 | 324 | 326 | 320 | 318 | 318 | 317 | 321 | 327 | 330 | 327 | 326 | 326 | 327 | 323 |
| 22 | | 326 | 326 | 326 | 324 | 325 | 322 | 321 | 322 | 319 | 314 | 319 | 316 | 322 | 323 | 319 | 317 | 318 | 322 | 325 | 326 | 327 | 327 | 324 | 326 | 322 |
| 23 | | 328 | 329 | 324 | 314 | 315 | 313 | | | | | 324 | | 328 | | 315 | 315 | 318 | 317 | 315 | 322 | 329 | 326 | 324 | 320 | |
| 24 | | 325 | 313 | 325 | 325 | 325 | 324 | 325 | | | | | | | | | | | 319 | 324 | | | | | 324 | |
| 25 | | 321 | 323 | 322 | 321 | 321 | 320 | 320 | 323 | 320 | | | 323 | 322 | 319 | 317 | 315 | 316 | | | | | | | | |
| 26 | Q | | | | | | | | | | | | | | | | | 315 | 321 | 328 | 332 | 332 | 332 | 329 | 328 | |
| | õ | 326 | 325 | 324 | 320 | 321 | 322 | 320 | 325 | 318 | 319 | | | | | | | | | 327 | 328 | 328 | 328 | 326 | 326 | |
| 28 | - | 327 | 326 | 323 | 322 | 323 | 323 | 323 | 324 | 324 | 323 | 320 | 320 | 319 | 320 | 313 | 307 | 314 | 320 | 317 | 314 | 300 | 299 | 303 | 302 | 317 |
| 29 | D | 306 | 314 | 321 | 301 | 308 | 316 | 322 | 324 | 326 | 322 | 327 | 328 | 322 | 319 | 317 | 317 | 316 | 320 | 326 | 326 | 322 | 316 | 311 | 321 | 319 |
| 30 | | 307 | 315 | 323 | 327 | 327 | 326 | 323 | 325 | 327 | 327 | 332 | 318 | 326 | 317 | 317 | 316 | 322 | 323 | 321 | 302 | 301 | 303 | 300 | 314 | 318 |
| 21 | D | 222 | 325 | 330 | 207 | 321 | 222 | 327 | 210 | 324 | 21.4 | 220 | 321 | 210 | 224 | 224 | 221 | 202 | 326 | 225 | 222 | 311 | 21 5 | 216 | 210 | 321 |
| 31 | ט | 323 | 323 | 330 | 307 | 321 | 322 | 321 | 219 | 324 | 314 | 320 | 321 | 218 | 3 24 | 3 24 | 321 | 323 | 320 | 323 | 323 | 311 | 313 | 210 | 210 | 321 |
| ME | AN | | 324 | 326 | 323 | 323 | 323 | | | | | | | | | | | 317 | | | | 325 | | | | |
| | AN Q | | | | | 326 | | | | | | | | | | | | 319 | 324 | 329 | 331 | | 329 | 324 | 324 | |
| ME | AN D | | | | | | | | | | | | | | | | | | | | 327 | 321 | | | | |

| | IGSTON | ISLAND | MAGN | ETIC | OBSER | VATOR | ĽΥ | | | | | | | NATION | | | | | | | | | | | | |
|--------|--------|--------|------|------|-------|-------|-----|-------|-----|-----|-----|-----|--------|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| JUNE | | | | | | | | | | | | | LAR QU | | • | | | | S) | | | | | | | |
| HOUR (| (UT) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 D |) | 417 | 349 | 329 | 372 | 404 | 412 | 426 | 415 | 430 | 428 | 415 | 415 | | 438 | 427 | | | 435 | 428 | | | 431 | 417 | 380 | 413 |
| 2 | | 381 | | 419 | 422 | 402 | 410 | 405 | 411 | 418 | | 421 | 413 | | 422 | 420 | 432 | | 441 | 435 | 439 | 429 | 400 | 403 | 415 | 418 |
| 3 | | 402 | 390 | 385 | 377 | 381 | 404 | 416 | 430 | 414 | | 413 | 416 | _ | 415 | 419 | _ | 432 | _ | | 420 | | 417 | 421 | | 412 |
| 4 | | 420 | 395 | 399 | | 400 | 415 | 414 | 414 | 409 | 418 | 434 | 424 | | 421 | 429 | 438 | 437 | 436 | 434 | 425 | 425 | 422 | 420 | 407 | 419 |
| 5 | | 398 | 412 | 414 | 412 | 404 | 411 | 411 | 410 | 411 | 414 | 412 | 417 | 411 | 415 | 416 | 422 | 427 | 434 | 434 | 426 | 429 | 415 | 416 | 426 | 417 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | 394 | 402 | 401 | 357 | 377 | 378 | 384 | 417 | 427 | 424 | 416 | 425 | 427 | 425 | 418 | 422 | 427 | 431 | 428 | 425 | 415 | 411 | 417 | 416 | 411 |
| 7 | | 409 | 390 | 394 | 410 | 413 | 412 | 409 | 421 | 419 | 409 | 420 | 428 | 417 | 416 | 420 | 430 | 438 | 441 | 438 | 435 | 431 | 425 | 438 | 395 | 419 |
| 8 | | 427 | 417 | 362 | 391 | 402 | 401 | 420 | 419 | 418 | 419 | 445 | 428 | 415 | 417 | 417 | 431 | 431 | 435 | 437 | 430 | 420 | 418 | 418 | 420 | 418 |
| 9 D |) | 386 | 367 | 411 | 418 | 415 | 397 | 378 | 372 | 398 | 410 | 426 | 442 | 436 | 437 | 442 | 451 | 453 | 462 | 455 | 442 | 416 | 429 | 426 | 422 | 421 |
| 10 | | 398 | 342 | 400 | 385 | 402 | 392 | 402 | 424 | 419 | 418 | 415 | 415 | 412 | 410 | 413 | 418 | 422 | 422 | 415 | 414 | 421 | 422 | 418 | 416 | 409 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | | 399 | 356 | 380 | 403 | 417 | 417 | 420 | 433 | 413 | 420 | 409 | 410 | 412 | 411 | 415 | 422 | 427 | 431 | 424 | 418 | 413 | 412 | 415 | 419 | 412 |
| 12 | | 420 | 419 | 419 | 416 | 413 | 405 | 422 | 420 | 416 | 415 | 411 | 408 | 413 | 413 | 415 | 424 | 431 | 429 | 425 | 419 | 417 | 415 | 415 | 416 | 417 |
| 13 | | 417 | 417 | 414 | 413 | 412 | 410 | 411 | 414 | | | | | | | | | | | | | | 407 | 402 | 406 | |
| 14 | | 412 | 410 | 408 | | | | | 393 | | | | | | | | | | | | | | | | | |
| 15 D |) | | | | 411 | 399 | 401 | 364 | 290 | 326 | 404 | | | 420 | 432 | | | 436 | 438 | 440 | 430 | 435 | 433 | 427 | 429 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | | 426 | | | | | 408 | 392 | 398 | 395 | | | | | | 417 | 418 | 425 | 428 | 425 | 422 | 417 | 418 | 416 | 418 | |
| 17 | | 417 | 420 | 417 | 415 | 411 | 399 | 396 | 401 | 403 | 412 | 428 | 412 | 416 | 414 | 415 | 420 | 423 | 428 | 427 | 425 | 421 | 420 | 418 | | 416 |
| 18 | | | | | 404 | 405 | 410 | 402 | 404 | 401 | 413 | 413 | 407 | 410 | 412 | 416 | 427 | 434 | 434 | 425 | 420 | 414 | 415 | 414 | 417 | 414 |
| 19 | | 416 | 407 | 414 | 414 | 412 | 409 | 405 | 403 | 404 | 404 | 405 | 412 | 411 | 411 | 413 | 424 | 428 | 430 | 423 | 417 | 413 | 412 | 413 | 413 | 413 |
| 20 Q | 2 | 413 | 412 | 414 | 413 | 411 | 409 | 408 | 409 | 405 | 409 | 410 | 413 | 411 | 409 | 411 | 416 | 421 | 427 | 427 | 418 | 412 | 411 | 411 | 411 | 413 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | | 411 | 411 | 409 | 407 | 407 | 406 | 405 | 405 | 408 | 407 | 408 | 408 | 407 | 409 | 412 | 422 | 428 | 428 | 424 | 417 | 414 | 414 | 411 | 412 | 412 |
| 22 0 |) | 413 | 413 | 410 | 410 | 408 | 408 | 408 | 411 | 411 | 413 | 413 | 416 | 414 | 411 | 415 | 422 | 428 | 430 | 425 | 419 | 413 | 411 | 411 | 412 | 414 |
| 23 Q | 2 | 412 | 412 | 413 | 413 | 412 | 407 | 400 | 403 | 407 | 411 | 411 | 411 | 408 | 407 | 413 | 422 | 429 | 430 | 425 | 417 | 412 | 410 | 410 | 410 | 413 |
| 24 | | 409 | 408 | 410 | 410 | 410 | 409 | 403 | 390 | 406 | 412 | 413 | 414 | 411 | 413 | 413 | 419 | 426 | 430 | 424 | 417 | 413 | 411 | 410 | 410 | 412 |
| 25 Q | 2 | 411 | 410 | 410 | 411 | 410 | 409 | 410 | 410 | 410 | 409 | 407 | 408 | 409 | 410 | 409 | 417 | 425 | 425 | 420 | 413 | 405 | 407 | 409 | 410 | 411 |
| | _ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | | 409 | 411 | 411 | 411 | 409 | 413 | 411 | 411 | 410 | 410 | 412 | 410 | 408 | 406 | 407 | 419 | 423 | 426 | 428 | 429 | 429 | 423 | 425 | 426 | 416 |
| 27 O |) | 422 | 413 | 413 | 413 | 411 | 404 | 412 | 412 | 412 | 415 | 412 | 408 | 408 | 406 | 411 | 419 | 422 | 423 | 421 | 418 | 417 | 419 | 420 | 416 | 414 |
| 28 D | - | 402 | 401 | 397 | 360 | 367 | 397 | 408 | 400 | 400 | 400 | 403 | 415 | 416 | 411 | | 417 | 419 | 417 | 412 | 409 | 411 | 407 | 405 | 380 | 403 |
| 29 D |) | 400 | 373 | 363 | 353 | 383 | 379 | 380 | 353 | 386 | 410 | 436 | 426 | 426 | 429 | 426 | 426 | 433 | 435 | 433 | 431 | 426 | 423 | 427 | 417 | 407 |
| 30 | | 384 | 394 | 397 | | 404 | | 413 | 408 | | | | 416 | | 417 | 416 | | 424 | | | _ | | | 412 | | 412 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MEAN | | 408 | 400 | 401 | 401 | 404 | 405 | 404 | 403 | 407 | 413 | | | 415 | 416 | 417 | 425 | 429 | 431 | 428 | 423 | 418 | 416 | 416 | 413 | 414 |
| MEAN | 0 | 414 | 412 | | 412 | 410 | 407 | 408 | 409 | 409 | 411 | 410 | 411 | 410 | 409 | 412 | 419 | 425 | 427 | 423 | 417 | | 412 | 412 | 412 | 413 |
| MEAN | - | | | | 382 | 394 | 398 | 391 | 366 | 388 | 411 | | 424 | | | | | 436 | | _ | | 422 | | 420 | 406 | 411 |
| | _ | | | 200 | JU_ | J J 1 | 550 | J J I | 200 | 555 | | | | | | 1_3 | | 100 | 10, | 101 | | | | | | |

| LIVIN JUNE | IGSTON | ISLAND | MAGN | ETIC | OBSER | VATOR | Y | u _ | 20000 | ~m r | TTTC T | 13 DIIT 3 | HORIZ R QUAN | ONTAL | | | | | | | | | | | | |
|---------------|--------|------------|------|------|------------|-------|------------|------------|------------|------------|------------|------------|-----------------|------------|------------|------------|-----|------------|-----|------------|------------|------------|-----|------------|------------|------------|
| HOUR (| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | доз 1 9 | 10 | A QUAN | 12 | 13 | 13 111 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 D |) | | | | 154 | | | | 180 | 174 | 180 | 180 | 182 | | | 170 | | 165 | 169 | | | 172 | | | 178 | 172 |
| 2 | | | | | 176 | | | | | 183 | | | 178 | | 172 | | | | 169 | | 164 | 160 | | | 171 155 | 172 |
| 3 4 | | | 176 | | 180 | | 166 181 | 174 180 | 179 177 | 176 181 | 177 183 | 180 195 | 181 189 | | 176 182 | 173 170 | | 171 174 | _ | | 180 180 | 180 176 | | 153 171 | | 173 178 |
| 5 | | | | | 180 | | | 179 | 182 | | 185 | | 187 | 187 | | | | 170 | | | | 171 | | | | 175 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | 173 | | | 169 | 171 | | | | | | | | 166 | 168 | | | | 163 | | 171 | 167 | 171 |
| 7 | | | | 171 | | 174 | 178 | 179 | | 184 | | | 190 | | 176 | | 165 | | 166 | | 165 | | | 143 | 137 | 170 |
| 8 | | | | 158 | | 160 | 165 | 168 | 170 | | | 182 | | | 174 | | 167 | 167 | | | | 170 | | 176 | | 168 |
| 9 D |) | 160 158 | | | 172 168 | | | 187 | 174 173 | 178 | | 172 176 | | 180 | 184 | | 168 | 162 175 | | | 169 | 156 | 167 | | 156 150 | 171 170 |
| 10 | | 136 | 149 | 134 | 100 | 103 | 1/3 | 109 | 1/3 | 1/4 | 1/4 | 176 | 176 | 180 | 102 | 1/6 | 1/4 | 175 | 176 | 180 | 1/4 | 136 | 101 | 139 | 139 | 170 |
| 11 | | 157 | 157 | 149 | 161 | 169 | 173 | 175 | 183 | 184 | 182 | 182 | 181 | 179 | 178 | 174 | 171 | 170 | 171 | 175 | 177 | 177 | 177 | 176 | 175 | 173 |
| 12 | | 176 | 176 | 176 | 177 | 180 | 183 | 180 | 185 | 184 | 184 | 183 | 181 | 183 | 180 | 172 | 167 | 166 | 172 | 178 | 180 | 181 | 179 | 177 | 176 | 178 |
| 13 | | 177 | | 178 | | | 182 | 180 | 183 | | | | | | | | | | | | | | 189 | 184 | 185 | |
| 14 | | 188 | 187 | 186 | | | | | 173 | | | | | | | | | | | | | | | | | |
| 15 D |) | | | | 173 | 171 | 171 | 175 | 167 | 148 | 156 | | | 162 | 160 | | | 170 | 169 | 175 | 174 | 162 | 165 | 167 | 168 | |
| 16 | | 164 | | | | | 165 | 170 | 184 | 177 | | | | | | 170 | 168 | 169 | 173 | 173 | 173 | 173 | 173 | 175 | 174 | |
| 17 | | 174 | 176 | 175 | 172 | 170 | 176 | 169 | 168 | 169 | 171 | 173 | 172 | 168 | 167 | 164 | 162 | 165 | 168 | 173 | 170 | 163 | 164 | 170 | | 170 |
| 18 | | | | | 174 | 172 | 178 | 174 | 172 | 172 | 178 | 180 | 178 | 179 | 176 | 163 | 161 | 162 | 169 | 174 | 175 | 173 | 173 | 171 | 170 | 172 |
| 19 | | 168 | 167 | | 170 | | | 176 | 175 | | | | 175 | | | | | 170 | | | 181 | 182 | | | 180 | 175 |
| 20 Ç | 2 | 178 | 177 | 176 | 175 | 174 | 176 | 178 | 179 | 179 | 178 | 177 | 179 | 179 | 176 | 173 | 172 | 171 | 171 | 176 | 180 | 182 | 181 | 181 | 180 | 177 |
| 21 | | 180 | 179 | 179 | 179 | 178 | 177 | 177 | 180 | 179 | 179 | 181 | 182 | 181 | 176 | 173 | 170 | 172 | 178 | 180 | 180 | 178 | 176 | 176 | 177 | 178 |
| 22 C |) | | 177 | | | 179 | | 178 | 178 | 178 | | 178 | 179 | | | 174 | | | 177 | | 184 | 182 | | 181 | | 178 |
| 23 0 | 2 | 181 | 181 | 181 | 180 | 180 | 179 | 181 | 178 | 179 | 180 | 181 | 181 | 181 | 177 | 172 | 168 | 171 | 177 | 183 | 185 | 186 | 185 | 183 | 184 | 180 |
| 24 | | 183 | 183 | 181 | 181 | 179 | 180 | 184 | 182 | 176 | 178 | 180 | 180 | 179 | 174 | 173 | 171 | 173 | 177 | 183 | 185 | 185 | 183 | 183 | 182 | 180 |
| 25 Ç | 2 | 182 | 182 | 181 | 180 | 179 | 177 | 177 | 177 | 178 | 181 | 182 | 183 | 183 | 178 | 173 | 169 | 170 | 174 | 178 | 181 | 181 | 180 | 180 | 179 | 178 |
| 26 | | 170 | 179 | 180 | 182 | 194 | 183 | 183 | 185 | 185 | 186 | 186 | 187 | 188 | 183 | 178 | 177 | 175 | 174 | 174 | 171 | 169 | 167 | 157 | 152 | 178 |
| 27 C |) | 156 | | 168 | | 172 | | 172 | | 174 | | 180 | 179 | 178 | 174 | | 165 | _ | 172 | | | 178 | | 173 | 170 | 172 |
| 28 D | - | 159 | | 158 | | 167 | | 172 | 173 | | | | 180 | | | 181 | | | 192 | | 183 | | 175 | | 155 | 174 |
| 29 D |) | 136 | 145 | 166 | 161 | 162 | 169 | 201 | 186 | 163 | 165 | 163 | 172 | 175 | 165 | 162 | 160 | 163 | 168 | 171 | 144 | 153 | 157 | 160 | 154 | 163 |
| 30 | | 167 | 173 | 166 | 163 | 167 | 173 | 174 | 173 | 170 | 175 | 179 | 176 | 171 | 171 | 172 | 171 | 173 | 174 | 176 | 174 | 170 | 169 | 173 | 173 | 172 |
| MEAN | | 169 | 170 | 170 | 173 | 172 | 175 | 177 | 177 | 176 | 177 | | | 170 | 176 | 171 | 160 | 170 | 172 | 176 | 175 | 173 | 172 | 170 | 169 | 174 |
| MEAN MEAN | 0 | | | 177 | | 177 | 175 176 | 177 177 | 177 | 178 | 179 | 180 | 180 | 179 180 | 176 | 172 | | 171 | | 176 179 | 182 | 182 | 180 | 179 | 169 179 | 174 177 |
| MEAN | - | | | | 168 | | | | 176 | | | | | | | | | 169 | | | | 166 | | | | 170 |
| | | | | | | | | | | | | | | ' | | | , | | | | | | | | | |

| LIVING | | ISLAND | MAGN | ETIC | OBSEF | RVATOE | RY | . . | 20506 | \ | | | | ICAL IN | | | | | | | | | | | | |
|---------|----|------------|------|------|------------|--------|------------|------------|-------|-----------|------|------------|------------|---------|------|------------|-----|-----|------|------|------|------------|------|------|------------|------------|
| JUNE 2 | | • | | • | _ | | - | | | | | | ~ | NTITIES | • | | • | | 4.7 | 10 | 10 | 00 | 01 | 00 | 00 | |
| HOUR (U | T) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| 1 D | | -102 | -102 | -90 | -91 | -96 | -101 | -96 | -98 | -86 | -94 | -101 | -101 | -100 | -95 | -100 | -99 | -97 | -102 | -105 | -104 | -102 | -99 | -97 | -101 | -98 |
| 2 | | -96 | -95 | -101 | -100 | -94 | -95 | -96 | -99 | -96 | -90 | -95 | -99 | -100 | -98 | -98 | -99 | -95 | -99 | -101 | -97 | -96 | -104 | -105 | -101 | -98 |
| 3 | | -99 | -93 | -90 | -86 | -90 | -93 | -96 | -94 | -99 | -100 | -100 | -100 | -99 | -99 | -98 | -97 | -97 | -99 | -102 | -101 | -100 | -94 | -87 | -92 | -96 |
| 4 | | -97 | -98 | -93 | | -95 | -98 | -98 | -98 | -99 | -96 | -94 | -91 | -91 | -95 | -92 | -93 | -98 | -99 | -101 | -100 | -96 | -95 | -93 | -95 | -96 |
| 5 | | -94 | -93 | -97 | -94 | -96 | -97 | -96 | -97 | -97 | -97 | -98 | -95 | -95 | -93 | -93 | -94 | -92 | -92 | -98 | -100 | -97 | -92 | -89 | -97 | -95 |
| 6 | | -103 | -100 | -96 | -84 | -94 | -95 | -98 | -95 | -99 | -101 | -102 | -97 | -97 | -100 | -94 | -98 | -98 | -99 | -100 | -103 | -97 | -100 | -101 | -99 | -98 |
| 7 | | -99 | -99 | -94 | -94 | -97 | -99 | -98 | -96 | -96 | -97 | -94 | -96 | -93 | -94 | -91 | -90 | -94 | -95 | -97 | -97 | -98 | -96 | -97 | -98 | -96 |
| 8 | | -100 | -107 | -103 | -99 | -101 | -102 | -102 | -102 | -101 | -101 | -95 | -92 | -97 | -100 | -97 | -96 | -96 | -99 | -96 | -97 | -101 | -104 | -104 | -101 | -100 |
| 9 D | | -98 | -92 | -96 | -101 | -99 | -98 | -84 | -79 | -88 | -87 | -91 | -86 | -95 | -98 | -95 | -90 | -91 | -88 | -103 | -101 | -103 | -101 | -99 | -99 | -94 |
| 10 | | -103 | -99 | -100 | -102 | -95 | -92 | -94 | -95 | -97 | -98 | -99 | -99 | -100 | -101 | -97 | -94 | -94 | -96 | -98 | -95 | -85 | -90 | -95 | -96 | -96 |
| 11 | | -98 | -95 | -93 | -100 | -103 | -102 | -100 | -97 | -93 | -93 | -96 | -97 | -96 | -97 | -96 | -95 | -95 | -96 | -99 | -99 | -98 | -97 | -96 | -95 | -97 |
| 12 | | -95 | -96 | -96 | -97 | -97 | -97 | -92 | -93 | -93 | -94 | -94 | -93 | -95 | -95 | -93 | -91 | -93 | -96 | -99 | -99 | -97 | -96 | -94 | -93 | -95 |
| 13 | | -94 | -95 | -96 | -96 | -96 | -95 | -93 | -94 | | | | | | | | | | | | | | -92 | -90 | -89 | |
| 14 | | -91 | -92 | -92 | | | | | -86 | | | | | | | | | | | | | | | | | |
| 15 D | | | | | -97 | -98 | -97 | -92 | -65 | -70 | -86 | | | -95 | -91 | | | -97 | -95 | -99 | -99 | -93 | -95 | -98 | -99 | |
| 16 | | -99 | | | | | -00 | -99 | -96 | -89 | | | | | | -04 | -94 | -06 | -07 | _00 | -98 | _00 | -97 | _00 | -96 | |
| 17 | | -95 -95 | | | -95 | | | | | | | -91 | | | | | | -98 | | | -100 | | -95 | -99 | -96 | -96 |
| 18 | | -95 | | | -93 -97 | | -95 -96 | -92 -92 | -94 | -95 | -95 | | -95 -95 | | | -90 -92 | | | -100 | | -103 | | | -95 | -94 | -96 |
| 19 | | -93 | | | -97 | | -98 | | -95 | -93 | -94 | | -93 | -94 | | -92 | | | -99 | | -100 | | -97 | -95 | -94 | -95 |
| 20 O | | | | | -90 | | | | | | | -93 -92 | | | | -92 -90 | | | | | | -99 | | -95 | -94 | -93 |
| 20 Q | | -93 | -91 | -91 | -30 | -91 | -32 | -93 | -32 | -93 | -92 | -32 | -93 | -93 | -93 | -90 | -90 | -92 | -93 | -90 | -30 | -99 | -90 | -95 | -34 | -93 |
| 21 | | -93 | -91 | -92 | -92 | -90 | -90 | -89 | -90 | -90 | -91 | -92 | -93 | -92 | -90 | -89 | -88 | -91 | -93 | -93 | -94 | -92 | -91 | -92 | -92 | -91 |
| 22 Q | | -92 | -91 | -91 | -90 | -90 | -89 | -90 | -90 | -90 | -90 | -90 | -91 | -92 | -91 | -90 | -89 | -91 | -94 | -96 | -97 | -95 | -92 | -92 | -92 | -91 |
| 23 Q | | -91 | -91 | -90 | -89 | -88 | -89 | -90 | -88 | -89 | -90 | -90 | -90 | -91 | -92 | -91 | -89 | -91 | -95 | -97 | -97 | -97 | -95 | -92 | -92 | -91 |
| 24 | | -91 | -91 | -89 | -89 | -88 | -88 | -90 | -87 | -84 | -88 | -89 | -90 | -90 | -88 | -88 | -89 | -91 | -93 | -96 | -96 | -95 | -93 | -91 | -91 | -90 |
| 25 Q | | -91 | -90 | -89 | -88 | -88 | -87 | -88 | -88 | -88 | -90 | -90 | -90 | -91 | -90 | -88 | -86 | -86 | -89 | -92 | -93 | -94 | -91 | -91 | -90 | -89 |
| 26 | | -89 | -89 | -89 | -89 | -90 | -88 | -88 | -89 | -89 | -89 | -88 | -89 | -90 | -89 | -87 | -85 | -85 | -85 | -87 | -85 | -84 | -87 | -87 | -87 | -88 |
| 27 Q | | -92 | -97 | -97 | -97 | -95 | -93 | -92 | -92 | -93 | -93 | -93 | -93 | -93 | -93 | -91 | -90 | -92 | -93 | -94 | -93 | -93 | -90 | -89 | -89 | -93 |
| 28 D | | -88 | -90 | -95 | -98 | -87 | -91 | -92 | -93 | -90 | -91 | -92 | -92 | -96 | -94 | -93 | -92 | -91 | -93 | -91 | -86 | -80 | -83 | -83 | -83 | -90 |
| 29 D | | -81 | -86 | -71 | -85 | -92 | -89 | -72 | -69 | -74 | -84 | -84 | -93 | -96 | -91 | -93 | -95 | -94 | -98 | -99 | -82 | -92 | -96 | -97 | -96 | -88 |
| 30 | | -98 | -95 | -93 | -92 | -94 | -90 | -87 | -91 | -86 | -87 | -95 | -93 | -91 | -93 | -94 | -93 | -93 | -94 | -94 | -91 | -88 | -88 | -91 | -91 | -92 |
| MEAN | | -95 | -95 | -93 | -94 | -94 | -94 | -92 | -91 | _91 | -92 | | | -94 | -94 | -93 | -93 | -94 | -95 | -98 | -97 | -95 | -95 | -94 | -94 | -94 |
| MEAN O | | | | | -91 | | -90 | -90 | -90 | | | -91 | | | | -90 | | | | -95 | | | -93 | | -91 | -92 |
| MEAN D | | | | | -91 | | | | | | | -92 | | | | -96 | | | | | | -93 -94 | | | -91 -96 | -92 -93 |
| THAM D | | | | 09 | 24 | 24 | 93 | 0, | 01 | UZ | 56 | 32 | 24 | 50 | 24 | 20 | ,, | 24 | 23 | 23 | 24 | 24 | ,, | 23 | 90 | ,, |

| LIVINGSTON | I ISLAND | MAGN | ETIC | OBSER | VATOR | Y | F = | 35500 | nሞ P | יי פוו.די | ARIIT.A | | INTEN | | TS nT | ١, | | | | | | | | | |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| HOUR (UT) | 0 | 1 | 2 | 3 | 4 | 5 | - 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 D | 321 | 324 | 308 | 302 | 314 | 323 | 321 | 322 | 310 | 319 | 325 | 327 | 325 | 315 | 319 | 317 | 313 | 320 | 325 | 323 | 322 | 315 | 313 | 324 | 319 |
| 2 | 315 | 310 | 319 | 322 | 318 | 317 | 318 | 321 | 323 | 315 | 318 | 322 | 323 | 318 | 318 | 317 | 312 | 317 | 319 | 313 | 310 | 321 | 325 | 320 | 318 |
| 3 | 321 | 311 | 309 | 313 | 310 | 311 | 318 | 319 | 321 | 322 | 324 | 325 | 324 | 321 | 319 | 317 | 317 | 321 | 325 | 326 | 324 | 314 | 298 | 304 | 317 |
| 4 5 | 314 315 | 321 312 | 309 317 | 319 | 314 320 | 323 321 | 322 321 | 322 323 | 325 323 | 323 325 | 328 328 | 322 324 | 320 324 | 322 320 | 312 316 | 313 315 | 319 312 | 322 310 | 326 320 | 325 323 | 319 317 | 317 305 | 314 297 | 319 306 | 320 317 |
| 5 | 313 | 312 | 317 | 319 | 320 | 321 | 321 | 323 | 323 | 323 | 320 | 324 | 324 | 320 | 316 | 313 | 312 | 310 | 320 | 323 | 317 | 303 | 291 | 306 | 317 |
| 6 | 319 | 314 | 313 | 307 | 311 | 311 | 316 | 316 | 322 | 324 | 328 | 323 | 322 | 324 | 310 | 315 | 316 | 318 | 321 | 325 | 313 | 317 | 320 | 316 | 318 |
| 7 | 316 | 322 | 314 | 313 | 319 | 323 | 322 | 324 | 324 | 325 | 321 | 327 | 319 | 317 | 309 | 308 | 313 | 312 | 314 | 314 | 314 | 306 | 301 | 298 | 316 |
| 8 | 308 | 316 | 314 | 309 | 314 | 317 | 320 | 320 | 321 | 322 | 322 | 320 | 319 | 321 | 315 | 314 | 314 | 318 | 314 | 315 | 320 | 325 | 325 | 321 | 318 |
| 9 D | 312 | 307 | 311 | 321 | 320 | 326 | 315 | 304 | 313 | 311 | 312 | 308 | 320 | 325 | 320 | 310 | 307 | 303 | 324 | 320 | 321 | 318 | 312 | 310 | 315 |
| 10 | 315 | 306 | 309 | 319 | 322 | 314 | 313 | 317 | 319 | 319 | 321 | 323 | 325 | 327 | 320 | 316 | 316 | 320 | 322 | 317 | 298 | 305 | 308 | 310 | 316 |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | 310 | 308 | 301 | 314 | 321 | 322 | 322 | 323 | 321 | 320 | 322 | 323 | 320 | 321 | 318 | 315 | 314 | 316 | 320 | 322 | 321 | 320 | 319 | 318 | 318 |
| 12 13 | 318 318 | 319 319 | 319 320 | 320 321 | 322 322 | 323 322 | 318 | 321 321 | 321 | 322 | 321 | 320 | 322 | 320 | 314 | 310 | 311 | 316 | 322 | 324 | 323 | 320 323 | 318 318 | 317 318 | 319 |
| 14 | 322 | 322 | 321 | 321 | 32Z | 322 | 319 | 309 | | | | | | | | | | | | | | 323 | 310 | 310 | |
| 15 D | | | | 318 | 318 | 317 | 315 | 288 | 282 | 299 | | | 310 | 306 | | | 316 | 314 | 320 | 320 | 308 | 312 | 315 | 317 | |
| | | | | 0_0 | 0_0 | | 0_0 | | | | | | 0_0 | | | | 0_0 | | | | | | 0_0 | | |
| 16 | 315 | | | | | 315 | 318 | 323 | 314 | | | | | | 314 | 313 | 315 | 318 | 319 | 319 | 319 | 318 | 320 | 318 | |
| 17 | 317 | 319 | 318 | 316 | 315 | 318 | 312 | 313 | 313 | 314 | 313 | 314 | 314 | 314 | 312 | 311 | 315 | 317 | 322 | 319 | 310 | 311 | 318 | | 315 |
| 18 | | | | 318 | 316 | 320 | 314 | 315 | 316 | 319 | 319 | 319 | 321 | 318 | 309 | 307 | 311 | 320 | 324 | 324 | 320 | 318 | 315 | 314 | 317 |
| 19 | 312 | 312 | 312 | 316 | 317 | 322 | 318 | 317 | 316 | 319 | 316 | 316 | 318 | 318 | 313 | 313 | 316 | 320 | 323 | 325 | 325 | 323 | 321 | 320 | 318 |
| 20 Q | 317 | 316 | 315 | 313 | 314 | 316 | 317 | 317 | 318 | 317 | 316 | 318 | 318 | 317 | 313 | 312 | 313 | 314 | 319 | 323 | 325 | 322 | 320 | 319 | 317 |
| 21 | 318 | 317 | 317 | 317 | 315 | 314 | 314 | 316 | 315 | 317 | 319 | 320 | 318 | 315 | 311 | 309 | 312 | 317 | 319 | 319 | 317 | 314 | 315 | 317 | 316 |
| 22 0 | 316 | 315 | 316 | 315 | 316 | 314 | 315 | 314 | 315 | 315 | 315 | 316 | 317 | 316 | 313 | 311 | 313 | 317 | 322 | 324 | 321 | 318 | 318 | 318 | 316 |
| 23 0 | 318 | 317 | 317 | 315 | 315 | 315 | 316 | 313 | 315 | 316 | 317 | 317 | 317 | 316 | 313 | 309 | 312 | 319 | 324 | 325 | 325 | 323 | 319 | 320 | 317 |
| 24 | 319 | 318 | 316 | 316 | 314 | 315 | 319 | 315 | 309 | 313 | 315 | 316 | 315 | 312 | 310 | 311 | 313 | 317 | 323 | 324 | 323 | 320 | 319 | 318 | 316 |
| 25 Q | 318 | 318 | 316 | 315 | 313 | 312 | 313 | 313 | 314 | 316 | 318 | 318 | 318 | 315 | 310 | 306 | 307 | 312 | 317 | 319 | 319 | 317 | 317 | 315 | 315 |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | 315 | 315 | 316 | 317 | 318 | 317 | 316 | 319 | 318 | 319 | 318 | 320 | 320 | 317 | 313 | 310 | 309 | 308 | 310 | 307 | 305 | 307 | 300 | 297 | 313 |
| 27 Q | 304 | 312 | 315 | 316 | 316 | 314 | 313 | 315 | 315 | 316 | 319 | 318 | 318 | 315 | 310 | 308 | 311 | 314 | 316 | 318 | 317 | 314 | 311 | 310 | 314 |
| 28 D | 303 | 301 | 309 | 323 | 306 | 311 | 314 | 315 | 312 | 314 | 316 | 318 | 324 | 321 | 319 | 318 | 319 | 325 | 323 | 314 | 305 | 307 | 301 | 296 | 313 |
| 29 D | 284 | 293 | 293 | 301 | 308 | 309 | 313 | 302 | 293 | 303 | 302 | 315 | 318 | 308 | 309 | 309 | 310 | 316 | 318 | 289 | 303 | 308 | 311 | 307 | 305 |
| 30 | 315 | 316 | 311 | 309 | 312 | 312 | 311 | 313 | 308 | 311 | 319 | 316 | 312 | 314 | 315 | 313 | 315 | 316 | 317 | 313 | 309 | 308 | 313 | 313 | 313 |
| MEAN | 314 | 314 | 313 | 315 | 316 | 317 | 317 | 316 | 315 | 317 | | | 319 | 317 | 314 | 312 | 314 | 317 | 320 | 319 | 316 | 316 | 314 | 314 | 316 |
| MEAN Q | 315 | 316 | 316 | 315 | 315 | 314 | 315 | 314 | 315 | 316 | 317 | 317 | 318 | 316 | 312 | 309 | 311 | 315 | 320 | 322 | 322 | 319 | 317 | 317 | 316 |
| MEAN D | | | 307 | 313 | 313 | 317 | 316 | 306 | 302 | 309 | 313 | 317 | 320 | 315 | 317 | 314 | 313 | 316 | 322 | 313 | 312 | 312 | 311 | 311 | 313 |

| LIVINGSTON | ISLAND | MAGN | ETIC | OBSER | VATOR | ĽΥ | D - | 14 55 | יכטפפס | חדוום | ma Dii | _ | NATION JANTITI | | | 0 1 N | ITAIIIME | G) | | | | | | | |
|--------------|--------|------|------|-------|-------|-----|-----|-------|--------|-------|--------|-----|-------------------|-----|-----|-------|----------|-----|-----|------------|------------|------------|------------|---------|------|
| HOUR (UT) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | .GREES | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 414 | 405 | 388 | 405 | 406 | 417 | 410 | 400 | 423 | 416 | | 432 | 421 | | 417 | | | | | | | | | | |
| 2 | | | | | | | | | 420 | | 415 | 407 | | 412 | | 423 | | | 427 | | 412 | | | | |
| 3 | 388 | | 407 | 410 | 409 | 413 | | 415 | | 416 | _ | 416 | | 415 | _ | 420 | 426 | 427 | 427 | 421 | 413 | 409 | 410 | | 414 |
| 4 | 411 | 381 | 397 | | 384 | 396 | | 414 | 414 | 411 | | 412 | | 409 | 412 | | 424 | 423 | | 415 | | 411 | | | 409 |
| 5 | 410 | 400 | 402 | 381 | 394 | 410 | 414 | 412 | 413 | 412 | 413 | 415 | 414 | 413 | 416 | 420 | 425 | 433 | 430 | 420 | 415 | 416 | 413 | 376 | 411 |
| 6 Q | 395 | 411 | 411 | 410 | 402 | 368 | 390 | 401 | 404 | 404 | 413 | 412 | 415 | 415 | 415 | 419 | 420 | 419 | 416 | 411 | 410 | 411 | 413 | 414 | 408 |
| 7 Q | 415 | 415 | 416 | 416 | 410 | 414 | 410 | 409 | 406 | 413 | 413 | 414 | 411 | 409 | 409 | 416 | 425 | 426 | 420 | 414 | 411 | 411 | 411 | 411 | 414 |
| 8 Q | 411 | 413 | 412 | 409 | 409 | 410 | 409 | 409 | 410 | 410 | 410 | 410 | 409 | 406 | 407 | 412 | 418 | 420 | | | | | | | |
| 9 Q | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | 432 | 430 | 423 | 418 | 432 | 447 | 423 | |
| 12 | 415 | 378 | 386 | 397 | 402 | 398 | 388 | 406 | 410 | 413 | 415 | 413 | 413 | 416 | 415 | 419 | 429 | 433 | 429 | 421 | 420 | 422 | 400 | 405 | 410 |
| 13 | 396 | 316 | 396 | 400 | 397 | 408 | 416 | 390 | 396 | 406 | 406 | 411 | 411 | 411 | 414 | 417 | 423 | 429 | 432 | 434 | 427 | 403 | 404 | 410 | 406 |
| 14 | 410 | 410 | 407 | 407 | 404 | 398 | 395 | 403 | 408 | 414 | 411 | 408 | 408 | 409 | 414 | 419 | 429 | 433 | 428 | 420 | 417 | 415 | 415 | 410 | 412 |
| 15 | 405 | 413 | 411 | 411 | 411 | 409 | 411 | 410 | 407 | 407 | 408 | 408 | 406 | 402 | | 408 | 418 | 423 | | 422 | 418 | 400 | 424 | | 411 |
| 16 | | | 410 | 410 | 408 | 406 | 406 | | | 405 | 404 | 405 | 403 | 402 | 401 | 412 | 422 | 430 | 431 | 424 | 422 | 427 | 427 | 450 | 415 |
| 17 | 472 | 434 | 338 | 406 | 394 | 386 | | 370 | | 404 | | 423 | | 426 | 425 | 428 | 431 | 434 | 436 | 433 | | 430 | 432 | 428 | 417 |
| 18 | 425 | 420 | 417 | 413 | 413 | 420 | 384 | 390 | 383 | 407 | 417 | 422 | 418 | 413 | 415 | 417 | 424 | 434 | | | | 421 | 423 | | 415 |
| 19 | | 414 | | | 408 | 398 | 401 | 402 | 391 | 408 | 406 | 405 | 409 | 409 | 411 | 418 | 425 | | | | 424 | | | | |
| 20 | | | | | | | | | | | | | | | | | | 431 | 432 | | 411 | 403 | 413 | 415 | |
| 01 0 | 41.6 | 41.6 | 44.4 | 44.4 | 410 | 400 | 405 | 41.5 | 410 | 41.6 | 41.6 | | 410 | 400 | 400 | 41.5 | 405 | 401 | 400 | 400 | 41.0 | 44.4 | 410 | 41.4 | 415 |
| 21 Q | | 416 | | | 413 | 403 | | | 412 | | | | 412 | | | 417 | _ | 431 | 429 | 422 | | 414 | | | 415 |
| 22 23 D | 413 | 412 | 413 | 414 | | | | | 414 | 416 | 413 | 419 | | | | | | | 438 | 426 | 412 429 | 391 426 | 446 427 | 467 | |
| _ | | | | | | | | | | | | | | 440 | 421 | | | | | | | | | | |
| 24 D 25 D | | | | 210 | 410 | 406 | 432 | 403 | 393 | 398 | 409 | 390 | 402 | 440 | 431 | 446 | 453 | 463 | 450 | 441 510 | 436 | | 245 | | |
| 25 D | | 296 | 250 | 312 | 196 | 127 | 95 | 211 | 512 | 580 | | 622 | | | | | | | 505 | 210 | | 491 | 345 | | |
| 26 D | | | | | | | | 434 | | 436 | 440 | 433 | 429 | 430 | 436 | 443 | 450 | 448 | 444 | 436 | 433 | 424 | 421 | 288 | |
| 27 D | 264 | 261 | 347 | 366 | | | | | | | | | | | | | | | | | | 393 | 305 | | |
| 28 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 29 | | | | | | | | | | 436 | 442 | 437 | 434 | 428 | | | | 454 | | | | | | | |
| 30 | | | | | 425 | 427 | 426 | 426 | 427 | 426 | | | | | 423 | 426 | | | | | | 419 | 409 | 408 | |
| 31 | 420 | 424 | 421 | | | 408 | 413 | 420 | | | | | 439 | 437 | 441 | 444 | 444 | 447 | 444 | 435 | 427 | 428 | 424 | 422 | |
| MEAN | | | | | | | | | | | | | | | | | | | | | | | | | |
| MEAN O | | | | | | | | | | | | | | | | | | | | | | | | | |
| MEAN D | | | | | | | | | | | | | | | | | | | | | | 434 | 384 | | |
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| LIVINGSTON | ISLAND | MAGN | ETIC | OBSER | VATOR | Y | н = | 20000 | nጥ ⊑ | יי פוז.דכ | ΔRIIT.Δ | | ZONTAL NTITIES | | | '' | | | | | | | | | |
|--------------|------------|------|------|-------|-------|-----|-----|-------|------|-----------|---------|-----|-------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| HOUR (UT) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DAY | • | _ | _ | | _ | • | • | • | • | _ | | | | | | | | | | | | | | | |
| 1 | 171 | 160 | 166 | 168 | 169 | 177 | 180 | 171 | 175 | 176 | 174 | 173 | 175 | 173 | 169 | | | | | | | | | | |
| 2 | | | | | | | | | 177 | 178 | 177 | 180 | | | 172 | | 166 | 163 | 173 | 171 | 171 | 171 | 165 | 172 | |
| 3 | 165 | 161 | 164 | 166 | 168 | 172 | 174 | 172 | 173 | 175 | 177 | 178 | 177 | 172 | 171 | 170 | 169 | 171 | 172 | 168 | 172 | 173 | 173 | | 171 |
| 4 | 169 | 159 | 162 | | 165 | 169 | 169 | 173 | 177 | 174 | 176 | 174 | 176 | 174 | 171 | 169 | 169 | 171 | 175 | 175 | 176 | 176 | 176 | 172 | 171 |
| 5 | 165 | 169 | 160 | 166 | 170 | 170 | 172 | 172 | 174 | 177 | 178 | 179 | 179 | 176 | 171 | 170 | 168 | 174 | 179 | 174 | 173 | 171 | 169 | 171 | 172 |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 Q | 172 | 171 | 172 | 175 | 173 | 180 | 171 | 172 | 175 | 181 | 186 | 182 | 176 | 173 | 170 | 168 | 171 | 174 | 178 | 178 | 175 | 174 | 173 | 173 | 175 |
| 7 Q | 174 | 173 | 173 | 173 | 173 | 174 | 177 | 176 | 177 | 177 | 178 | 178 | 178 | 176 | 173 | 172 | 172 | 174 | 177 | 177 | 174 | 174 | 174 | 175 | 175 |
| 8 Q | 175 | 175 | 175 | 173 | 176 | 178 | 177 | 178 | 179 | 181 | 183 | 185 | 185 | 183 | 178 | 174 | 176 | 179 | | | | | | | |
| 9 Q | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | | 178 | | | | |
| 12 | 170 | | | 162 | | | 164 | | | 169 | | | 170 | | 164 | | | | | | 174 | | | | 166 |
| 13 | | | | 156 | | 164 | _ | 184 | | 166 | | | | | 160 | | | | _ | _ | 158 | | | | 163 |
| 14 | | | | 170 | _ | | | 169 | | 169 | | | | | 159 | _ | _ | | | | 174 | _ | | | 169 |
| 15 | 165 | 167 | 169 | 171 | 172 | 172 | 172 | 175 | 175 | 176 | 177 | 179 | 179 | 177 | | 168 | 167 | 171 | | 177 | 168 | 162 | 162 | | 171 |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | | | | 177 | | | | | | 182 | | | | | 172 | | | | | | 177 | | | | 174 |
| 17 | | 103 | | _ | | 137 | | | | 148 | | | | | 151 | | | | | | 154 | | | | 142 |
| 18 | | | | 158 | _ | 166 | | | | 163 | | | | | 152 | | _ | | | | | | | | 160 |
| 19 | | 160 | | 167 | | 165 | | | | 162 | | | | | 161 | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | | | | | 157 | 162 | | 161 | 163 | 163 | 164 | |
| 21 0 | 160 | 170 | 170 | 170 | 172 | 174 | 172 | 175 | 170 | 174 | 175 | 175 | 172 | 170 | 166 | 165 | 165 | 167 | 172 | 175 | 174 | 171 | 170 | 174 | 171 |
| 21 Q 22 | 168 174 | | 174 | | _ | 1/4 | | | | 177 | | | | | 100 | 165 | 165 | | _ | | 182 | | | | |
| 22 23 D | | | | | | | | | | | | | | | | | | | | | | 152 | | | |
| 23 D 24 D | | | | | 161 | | | | | 167 | | | 166 | | 158 | | | | | | 173 | _ | _ | | |
| 25 D | | 114 | 67 | | 71 | | | | | 129 | | | | | | | | | | | | | 107 | | |
| 23 D | | 114 | 0, | ,, | , _ | 102 | 100 | 130 | 143 | 123 | | 102 | | | | | | | 30 | 103 | | 93 | 10, | | |
| 26 D | | | | | | | | 132 | | 135 | 134 | 139 | 140 | 137 | 130 | 128 | 135 | 141 | 147 | 146 | 140 | 144 | 157 | 146 | |
| 27 D | 124 | 57 | 47 | 101 | | | | | | | | | | | | | | | | | | 79 | 73 | | |
| 28 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 29 | | | | | | | | | | 142 | 145 | 145 | 143 | 138 | | | | 139 | | | | | | | |
| 30 | | | | | 144 | 144 | 147 | 150 | 150 | 150 | | | | | 138 | 135 | | | | | | 152 | 142 | 142 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 31 | 150 | 151 | 151 | | | 152 | 151 | 151 | | | | | 160 | 165 | 154 | 147 | 138 | 141 | 146 | 148 | 147 | 144 | 147 | 148 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| MEAN | | | | | | | | | | | | | | | | | | | | | | | | | |
| MEAN Q | | | | | | | | | | | | | | | | | | | | | | | | | |
| MEAN D | | | | | | | | | | | | | | | | | | | | | | 128 | 129 | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |

| LIVINGSTON | ISLAND | MAGN | ETIC | OBSEE | RVATOF | RY | _ | 00500 | | | | | ICAL IN | | | | | | | | | | | | |
|------------|--------|------|------|-------|-------------|-----|-----|-------|-----|------|------|------|---------|------------|------|------------|------------|------------|------|------|------|------|------------|------------|------------|
| JULY 2004 | • | _ | _ | _ | | _ | | | | | | - | NTITIES | • | | • | | | | | | | | | |
| HOUR (UT) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | -90 | -88 | -90 | -92 | -92 | | | -82 | | -92 | | | | -95 | | | | | | | | | | | |
| 2 | | | | | | | | | | -88 | | | | -89 | -88 | | -89 | | | -95 | | | | -90 | |
| 3 | | | | | -92 | | | | | -91 | | | | -87 | | | | -93 | | -92 | | -94 | -92 | | -91 |
| 4 | -90 | | | | -91 | | | -90 | | -90 | | | | -92 | | -90 | | -93 | -96 | -95 | | -93 | -91 | -90 | -91 |
| 5 | -85 | -87 | -84 | -85 | -85 | -87 | -91 | -91 | -91 | -92 | -92 | -91 | -89 | -88 | -86 | -89 | -89 | -92 | -95 | -92 | -91 | -91 | -90 | -91 | -89 |
| 6 Q | -88 | | -89 | | -85 | -81 | | -86 | | -88 | | -85 | -85 | | | -86 | | -90 | -91 | | | | -88 | -88 | -87 |
| 7 Q | -88 | -87 | -86 | -86 | -87 | -86 | -87 | -88 | -88 | -87 | -88 | -88 | -90 | -89 | -88 | -86 | -87 | -88 | -90 | -89 | -88 | -88 | -88 | -89 | -88 |
| 8 Q | -89 | -88 | -87 | -86 | -86 | -88 | -87 | -87 | -88 | -88 | -89 | -89 | -89 | -88 | -86 | -85 | -85 | -85 | | | | | | | |
| 9 Q | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | -87 | -88 | -90 | -89 | -86 | -76 | -93 | |
| 12 | -98 | -91 | -93 | -92 | -94 | -93 | -87 | -86 | -88 | -90 | -91 | -91 | -90 | -88 | -90 | -90 | -90 | -91 | -95 | -96 | -91 | -81 | -92 | -90 | -91 |
| 13 | -92 | -91 | -79 | -95 | -95 | -96 | -90 | -80 | -81 | -89 | -90 | -90 | -91 | -91 | -88 | -89 | -87 | -88 | -86 | -85 | -91 | -95 | -98 | -95 | -90 |
| 14 | -94 | -93 | -92 | -91 | -90 | -87 | -78 | -83 | -85 | -86 | -89 | -90 | -90 | -88 | -86 | -88 | -88 | -90 | -93 | -95 | -94 | -92 | -90 | -89 | -89 |
| 15 | -87 | -88 | -90 | -91 | -90 | -91 | -90 | -90 | -89 | -89 | -90 | -90 | -91 | -91 | | -88 | -87 | -88 | | -89 | -84 | -83 | -85 | | -89 |
| 1.0 | | | 0.1 | 00 | 00 | 00 | 00 | | | 0.4 | 00 | 0.5 | 07 | 0.77 | 0.6 | ٥. | 0.0 | 0.4 | 0.5 | 00 | 00 | 00 | 0.5 | 00 | 07 |
| 16 17 | | | | | -90 -105 | | | | | -84 | | | -87 | -87 -97 | | -85 -98 | -83 -98 | -84 -98 | -85 | | -90 | | -85 -97 | -83 -98 | -87 -97 |
| | -84 | | | | | | | | | -98 | -99 | | -95 | | | | | | | -101 | | | | | |
| 18 | | | | | -95 | | | -89 | -90 | | | | | -95 | -94 | | -93 | -95 | | | | -97 | | | -94 |
| 19 | | | | | -89 | | | -90 | | -87 | | | -92 | -92 | | -88 | -90 | | | | | | | | |
| 20 | | | | | | | | | | | | | | | | | | -87 | -92 | | -93 | -93 | -94 | -91 | |
| 21 Q | -93 | -93 | -91 | -90 | -90 | -89 | -86 | -85 | -86 | -88 | -89 | -90 | -89 | -89 | -87 | -87 | -88 | -88 | -92 | -94 | -93 | -91 | -90 | -91 | -90 |
| 22 | -91 | -89 | -87 | -86 | | | | | -87 | -87 | -89 | -92 | | | | | | | -92 | -94 | -93 | -72 | -74 | -97 | |
| 23 D | | | | | | | | | | | | | | | | | | | | | -117 | -112 | -107 | | |
| 24 D | | | | | -96 | -92 | -85 | -87 | -90 | -88 | -89 | -88 | -81 | -73 | -76 | -78 | -86 | -85 | -91 | -101 | -102 | -102 | | | |
| 25 D | | -81 | -55 | -47 | -28 | 14 | -8 | -10 | 44 | 72 | | -22 | | | | | | | -142 | -140 | | -150 | -148 | | |
| 26 D | | | | | | | | -114 | | -108 | -102 | -109 | -111 | -109 | -104 | -101 | -102 | -104 | -105 | -106 | -102 | -104 | -110 | -114 | |
| 27 D | -84 | -14 | -59 | -75 | | | | | | | | | | | | | | | | | | -139 | | | |
| 28 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 29 | | | | | | | | | | -100 | -101 | -104 | -104 | -104 | | | | -104 | | | | | | | |
| 30 | | | | | -101 | | | | | -101 | | | | | -103 | | | | | | | -106 | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 31 | -103 | -102 | -101 | | | -96 | -98 | -98 | | | | | -94 | -96 | -91 | -89 | -88 | -95 | -100 | -102 | -103 | -100 | -102 | -103 | |
| MEAN | | | | | | | | | | | | | | | | | | | | | | | | | |
| MEAN O | | | | | | | | | | | | | | | | | | | | | | | | | |
| MEAN D | | | | | | | | | | | | | | | | | | | | | | -122 | -120 | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |

| LIVINGSTON JULY 2004 | ISLAND | MAGN | ETIC | OBSER | VATOR | Y | F = | 35500 | nT D | יי פוז.דכ | ΔRIIT.Δ | | INTEN | | TS nT | '\ | | | | | | | | | |
|-------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-----|-----|------|------------|------------|-----|------------|
| HOUR (UT) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 311 | 303 | 308 | 311 | 312 | 314 | 312 | 304 | 310 | 316 | 312 | 306 | 315 | 316 | 313 | | | | | | | | | | |
| 2 | | | | | | | | | 313 | 313 | 315 | 318 | 315 | 313 | 310 | 309 | 308 | 305 | 317 | 316 | 315 | 314 | 308 | 312 | |
| 3 | 304 | 301 | 307 | 310 | 311 | 314 | 314 | 312 | 314 | 315 | 317 | 317 | | 310 | 311 | 310 | 312 | 313 | 315 | 311 | 315 | 315 | 314 | | 312 |
| 4 | 310 | 302 | 304 | | 309 | 312 | 311 | 313 | 315 | 313 | 316 | 313 | | 315 | 311 | 310 | 311 | 314 | 319 | 318 | 317 | | 315 | 311 | 312 |
| 5 | 304 | 308 | 299 | 304 | 307 | 308 | 312 | 312 | 314 | 316 | 317 | 316 | 315 | 313 | 308 | 309 | 309 | 315 | 320 | 314 | 313 | 312 | 310 | 312 | 311 |
| 6 0 | 210 | 309 | 310 | 312 | 309 | 308 | 204 | 309 | 311 | 315 | 316 | 313 | 309 | 308 | 307 | 307 | 309 | 313 | 316 | 315 | 313 | 211 | 311 | 311 | 311 |
| 6 Q 7 Q | 310 311 | 309 | 309 | 309 | 310 | 308 | 304 312 | 312 | 311 | 312 | 313 | 313 | 315 | 313 | 310 | 307 | 309 | 313 | 316 | 315 | 313 | _ | 311 | 311 | 311 |
| 7 <u>Q</u> 8 Q | 313 | | 311 | 309 | 311 | 313 | 312 | | | 316 | | 318 | 318 | 316 | 312 | 309 | 310 | 311 | 314 | | | | | | |
| 9 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | 309 | 314 | 316 | 314 | 311 | 282 | 310 | |
| 12 | 317 | 300 | 307 | 308 | 312 | 313 | 305 | 304 | 306 | 310 | 312 | 312 | 311 | 307 | 307 | 305 | 306 | 309 | 317 | 320 | 314 | 296 | 312 | 310 | 309 |
| 13 | 309 | 312 | 284 | 306 | 306 | 312 | 314 | 311 | 301 | 307 | 309 | 309 | 310 | 308 | 304 | 303 | 302 | 303 | 298 | 296 | 304 | 310 | 317 | 315 | 306 |
| 14 | 314 | 313 | 312 | 312 | 312 | 315 | 303 | 304 | 306 | 306 | 310 | 312 | 310 | 306 | 301 | 301 | 302 | 307 | 313 | 317 | 316 | 313 | 312 | 309 | 309 |
| 15 | 305 | 307 | 310 | 312 | 312 | 312 | 312 | 313 | 312 | 313 | 314 | 315 | 316 | 315 | | 308 | 306 | 310 | | 314 | 305 | 300 | 302 | | 310 |
| 1.0 | | | 215 | 24.4 | 245 | 21.4 | 21.4 | | | 210 | 210 | 210 | 212 | 210 | 200 | 206 | 204 | 206 | 207 | 212 | 21.4 | 204 | 206 | 007 | 210 |
| 16 | | 071 | 315 | 314 302 | 315 300 | 314 307 | 314 | | | 312 305 | 310 306 | 310 | 313 | 312 305 | 308 306 | 306 305 | 304 303 | 306 | 307 | 313 | 314 | | 306 307 | 297 | 310 301 |
| 17 18 | 294 311 | 271 309 | 259 310 | 302 | 300 | 307 | 299 306 | 290 301 | 299 312 | 305 | 310 | 305 309 | 303 310 | 305 | 304 | 305 | 303 | 304 310 | 307 | 311 | 310 | 311 313 | | 311 | 301 |
| 19 | 309 | 309 | 307 | 311 | | 309 | 308 | 301 | 304 | 303 | 313 | 312 | 310 | | 304 | 304 | 303 | 310 | | | 304 | 313 | 312 | | 308 |
| 20 | 309 | | | | | | | | | | | | | | | | | 301 | 308 | | 304 | 309 | 309 | 308 | |
| 20 | | | | | | | | | | | | | | | | | | 301 | 300 | | 300 | 309 | 309 | 300 | |
| 21 Q | 312 | 313 | 311 | 311 | 312 | 312 | 309 | 309 | 308 | 311 | 313 | 313 | 312 | 310 | 305 | 305 | 306 | 307 | 314 | 317 | 315 | 312 | 311 | 314 | 311 |
| 22 | 313 | 312 | 310 | 310 | | | | | 312 | 312 | | 327 | | | | | | | 322 | 322 | 320 | 268 | 263 | 282 | |
| 23 D | | | | | | | | | | | | | | | | | | | | | 321 | 319 | 315 | | |
| 24 D | | | | | 311 | 311 | 317 | 312 | 312 | 307 | 312 | 311 | 301 | 293 | 293 | 292 | 304 | 301 | 310 | 322 | 322 | 321 | | | |
| 25 D | | 272 | 224 | 218 | 204 | 186 | 207 | 226 | 185 | 154 | | 216 | | | | | | | 312 | 316 | | 317 | 323 | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 D | | | | | | | | 309 | | 306 | 300 | 308 | 311 | 308 | 299 | 296 | 301 | | 310 | 310 | 304 | | 320 | 317 | |
| 27 D | 280 | 184 | 216 | 260 | | | | | | | | | | | | | | | | | | 300 | 290 | | |
| 28 | | | | | | | | | | 202 | 306 | 308 | 307 | 304 | | | | 305 | | | | | | | |
| 29 30 | | | | | 305 | 306 | 308 | 311 | 309 | 303 308 | 306 | 308 | 307 | 304 | 303 | 301 | | 305 | | | | 313 | 304 | 303 | |
| 30 | | | | | 303 | 306 | 306 | 311 | 309 | 306 | | | | | 303 | 301 | | | | | | 313 | 304 | 303 | |
| 31 | 310 | 310 | 309 | | | 306 | 306 | 306 | | | | | 309 | 312 | 302 | 297 | 291 | 298 | 305 | 309 | 309 | 304 | 308 | 309 | |
| - - | | | | | | | | | | | | | | | | ' | | | | | | | | | |
| MEAN | | | | | | | | | | | | | | | | | | | | | | | | | |
| MEAN Q | | | | | | | | | | | | | | | | | | | | | | | | | |
| MEAN D | | | | | | | | | | | | | | | | | | | | | | 313 | 312 | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | TON ISLANI | MAGN | NETIC | OBSER | VATOR | Y | _ | | | | | _ | NATION | | | | | | | | | | | | |
|------|---------|------------|------|-------|-------|-------|-----|----------|-----|------------|-----|-----|-----|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-------|
| | GUST : | | - | • | 2 | | - | D 6 | | DEGRE 8 | | | | QUANTI | | • | | | | 10 | 10 | 00 | 01 | 00 | 00 | \C_2\ |
| | UR (UT) |) 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DA: | | 121 | 356 | 380 | 420 | 386 | 407 | 414 | 415 | 415 | 417 | 116 | 414 | 116 | 414 | 414 | 410 | 430 | | 127 | 428 | 422 | 425 | 416 | 422 | 414 |
| 2 | | 421 | | 300 | 420 | | | 414 | 413 | 413 | | | 421 | | | | | 430 | | _ | 429 | | 428 | 429 | 396 | 414 |
| 3 | | 413 | 418 | 416 | 403 | 383 | 389 | 403 | 409 | | 419 | | 417 | | | 417 | | | | _ | | | | 422 | 422 | |
| 4 | ~ | 421 | 421 | 421 | 419 | | 419 | | 414 | 415 | 416 | 417 | | | | | | | | | | | | | | |
| 5 | ~ | | | | | | | | | 416 | | | | | | | | | | | | | 425 | | | |
| 3 | | | | | | | | 403 | 313 | 410 | 410 | 413 | | | | | | | | | | | 423 | | | |
| 6 | | | | | 405 | 412 | 415 | 415 | 418 | 419 | 420 | 418 | 415 | | 407 | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | 0 | | | | | | | | | | | 418 | 416 | 412 | 409 | 415 | 425 | 435 | 446 | 446 | 433 | 425 | 421 | 420 | 419 | |
| 9 | ~ | 416 | 415 | 416 | 409 | | | | | | | | | | | | | | 443 | 455 | 458 | 468 | 472 | 472 | | |
| | D | | 442 | | | 415 | 415 | 409 | 409 | 412 | 413 | 412 | 407 | 406 | 409 | 425 | 444 | 452 | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | 407 | 429 | 404 | | | 429 | | | | | | | 427 | 418 | |
| 12 | | 388 | 411 | 416 | 414 | 410 | 409 | 420 | 418 | 415 | 413 | 413 | | | | 406 | 417 | 432 | 445 | 449 | 437 | 425 | 427 | 423 | 407 | 418 |
| 13 | | 401 | 392 | 397 | 405 | 409 | 412 | 416 | 416 | 417 | 415 | 414 | 413 | 398 | 396 | 399 | 413 | 433 | 448 | 458 | 443 | 432 | 427 | 432 | | 417 |
| 14 | | 427 | 419 | 402 | 406 | 409 | 409 | 405 | 415 | 414 | 411 | | 406 | | | | | | 439 | 443 | 435 | 423 | 418 | 415 | 415 | |
| 15 | | 415 | 415 | 414 | 414 | 413 | 414 | 415 | 416 | 418 | 419 | 414 | | | | | | | | | | 422 | 420 | 417 | 415 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | | 413 | 410 | 410 | 409 | 412 | 412 | 408 | 412 | 414 | 411 | 411 | 407 | 396 | 392 | 397 | 412 | 424 | 437 | 442 | 435 | | | | | |
| 17 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | | | | | | | 374 | | | | 409 | 411 | 413 | 403 | 397 | 399 | 410 | 425 | 438 | 443 | 441 | 427 | 422 | 426 | 412 | |
| 19 | | 415 | 411 | 412 | 411 | | | | | | | | | | | | | | | | | | | | | |
| 20 | D | | | | 396 | 378 | 358 | 355 | 368 | 367 | 381 | 403 | 397 | 406 | 403 | 420 | 427 | 436 | 455 | 470 | | | | | 427 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | D | 425 | | 415 | _ | | 392 | | | | | | | 404 | 403 | | | | 456 | _ | _ | 419 | | 403 | 415 | |
| 22 | | 429 | | 423 | | | | 367 | 360 | 411 | | 422 | | | 421 | 427 | 440 | 449 | 450 | | | 431 | | 422 | 414 | 418 |
| 23 | | 408 | | | | | | | | | | | | | | | | | | | | | | | | |
| 24 | ~ | | | | | | | | | | | | | | 402 | | 423 | | | 455 | | | | | 417 | |
| 25 | Q | 416 | 413 | 409 | 404 | 395 | 380 | 383 | 394 | 395 | 395 | 399 | 396 | 392 | 393 | 400 | 412 | 428 | 441 | 445 | 440 | 428 | | | | 408 |
| | | | | | | | | | | | | | 400 | | | | 405 | | | | 400 | | 404 | 44.0 | | |
| 26 | | | | | | | | | | | | | 402 | 394 | 390 | 390 | 405 | 424 | 440 | | 438 | _ | 421 | | 398 | |
| 27 | | 401 | 388 | 399 | | 401 | | | | 410 | | | 403 | 393 | 388 | 399 | 413 | | 444 | _ | | 431 | | 400 | 414 | 411 |
| 28 | | 413 | 413 | 405 | 395 | 407 | 398 | | 399 | 437 | _ | | 414 | 401 | | 398 | 412 | 429 | | | 439 | | 423 | 421 | 418 | 417 |
| 29 | | 415 | 413 | | 366 | 389 | 404 | | 419 | 418 | | 410 | | 388 | 378 | 387 | 404 | | 442 | 439 | 427 | 423 | 419 | 417 | 414 | 409 |
| 30 | D | 414 | 413 | 415 | 407 | 397 | 392 | 381 | 344 | 355 | 411 | 394 | 422 | | | 473 | | | | | 533 | | | | | |
| 21 | D | | | | | | | | | | | | | | | | | | | | | | 456 | 441 | 40E | |
| 31 | ט | | | | | | | | | | | | | | | | | | | | | | 456 | 441 | 423 | |
| MEZ | ΔNI | | | | | | | | | | | | | | | | | | | | | | | | | |
| | AN O | | | | | | | | | | | 412 | 410 | | | | | | | | | | | | | |
| | AN D | | | | | | | | | | | | 410 | | | | | | | | | | | | | |
| LIC. | ם אוב | | | | | | | _ | | | | | | _ | | | | | | | | | | | | |

| LIVINGSTO | | MAGN | ETIC | OBSER | VATOR | Y | u | - 200 | ,00 sm | י דוונס | יים איים | | ZONTAL UANTITI | | | ~ π \ | | | | | | | | | |
|-------------|-----|------|------|-------|-------|-----|-----|------------|--------|---------|----------|-------|-------------------|-----|-----|--------------|-----|-----|-----|-----|-----|-----|-------|-----|------|
| HOUR (UT) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | - 200 7 | 8 | | 10 | 11 | 12 | | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 146 | 125 | 130 | 147 | 147 | 153 | 153 | 154 | 155 | 156 | 158 | 159 | 159 | 157 | 149 | 143 | 142 | | 150 | 153 | 150 | 141 | 143 | 146 | 149 |
| 2 | | | | | | | | | | | | 159 | 157 | 154 | 153 | 151 | 151 | 151 | 155 | 156 | 157 | 151 | 144 | 146 | |
| 3 Q | 150 | 152 | 153 | 160 | 162 | 161 | 157 | 159 | 159 | 160 | 161 | 162 | 163 | 160 | 155 | | | | | | | 158 | 158 | 159 | |
| 4 Q | 160 | 161 | 161 | 161 | 161 | 160 | 161 | 163 | 164 | 166 | 168 | | | | | | | | | | | | | | |
| 5 | | | | | | | 164 | 163 | 165 | 168 | 169 | | | | | | | | | | | 158 | | | |
| 6 | | | | 155 | 162 | 162 | 162 | 162 | 163 | 165 | 168 | 169 | | 166 | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 Q | | | | | | | | | | | 156 | 156 | 155 | 148 | 143 | 142 | | | 154 | 158 | 158 | 157 | 157 | 157 | |
| 9 | 156 | _ | _ | _ | | | | | | | | | | | | | | 151 | 146 | 150 | 142 | 136 | 142 | | |
| 10 D | | 129 | 147 | 152 | 152 | 152 | 153 | 152 | 153 | 158 | 157 | 155 | 154 | 149 | 137 | 141 | 135 | | | | | | | | |
| 11 | | | | | | | | | | | 165 | 1 5 0 | 150 | | | 140 | | | | | | | 1 5 0 | 140 | |
| 12 | 148 | 1/0 | 153 | | | | | | 166 | | | | | | | 146 | | | | | 164 | | | | 158 |
| 13 | 167 | | 157 | | | | | | 161 | | | | | | | 148 | | | | | 162 | | | | 157 |
| 14 | | | 161 | | | | | | | 170 | | | | | | | | | | | 163 | | | | |
| 15 | | | 163 | | | | | _ | 167 | | | | | | | | | | | | 159 | | | | |
| | 101 | -0- | 100 | | 100 | -0. | | _00 | | | | | | | | | | | | | | | 100 | 100 | |
| 16 | 159 | 161 | 163 | 166 | 164 | 165 | 166 | 167 | 170 | 174 | 175 | 177 | 170 | 159 | 146 | 142 | 144 | 144 | 151 | 158 | | | | | |
| 17 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | | | | | | 155 | | | | 167 | 171 | 169 | 166 | 156 | 150 | 145 | 143 | 149 | 156 | 158 | 159 | 159 | 160 | 152 | |
| 19 | 158 | 162 | 164 | 162 | | | | | | | | | | | | | | | | | | | | | |
| 20 D | | | | 156 | 165 | 166 | 160 | 159 | 159 | 160 | 164 | 167 | 169 | 162 | 147 | 146 | 144 | 148 | 155 | | | | | 159 | |
| 21 D | 159 | 153 | 168 | 138 | 139 | 148 | | | | 159 | | 160 | 165 | 158 | | | | 146 | 158 | 149 | 154 | 156 | 144 | 147 | |
| 22 | 133 | 151 | 156 | 159 | 165 | 164 | 159 | 156 | 157 | 164 | 157 | 164 | 155 | 151 | 145 | 134 | 133 | 151 | 159 | 161 | 155 | 150 | 150 | 155 | 153 |
| 23 | 152 | | | | | | | | | | | | | | | | | | | | | | | | |
| 24 Q | | | | | | | | | | | | 165 | 164 | 159 | 151 | 148 | 147 | | 157 | 162 | 161 | | | 163 | |
| 25 Q | 163 | 164 | 164 | 161 | 160 | 161 | 157 | 157 | 158 | 161 | 167 | 171 | 168 | 165 | 158 | 151 | 145 | 146 | 153 | 163 | 164 | | | | 160 |
| 26 | | | | | | | | | | | | 173 | 173 | 167 | 156 | 147 | 148 | 151 | 157 | 163 | 167 | 165 | 162 | 159 | |
| 27 | 155 | 146 | 161 | 167 | 170 | 172 | 166 | 164 | 167 | 168 | 169 | 169 | _ | | | 140 | | | | | 155 | | | | 158 |
| 28 | 159 | | | | | 171 | 173 | | | 176 | | | | | | 151 | | | | | 159 | | | | 163 |
| 29 | 166 | 167 | 165 | 168 | 163 | 163 | 165 | 168 | 169 | 171 | 179 | 183 | 181 | 177 | 165 | 161 | 162 | 167 | 173 | 176 | 171 | 172 | 174 | 178 | 170 |
| 30 D | 180 | 180 | 168 | 158 | 159 | 163 | 167 | 168 | 174 | 179 | 175 | 173 | | | 122 | | | | | 113 | | | | | |
| 31 D | | | | | | | | | | | | | | | | | | | | | | 132 | 135 | 129 | |
| 31 <i>D</i> | | | | | | | | | | | | | | | | | | | | | | 132 | 133 | 123 | |
| MEAN | | | | | | | | | | | | | | | | | | | | | | | | | |
| MEAN Q | | | | | | | | | | | 163 | 165 | | | | | | | | | | | | | |
| MEAN D | | | | | | | | | | | | | | | | | | | | | | | | | |

| LIVINGSTON | | MAGN | ETIC | OBSER | RVATOE | RY | | | | | | | CAL IN | | | | | | | | | | | | |
|---|------------|---------|------|-------|--------|---------|------|-------|------|-------|---------|------------|------------|-------------|-----|------------|------------|---------|---------|---------|------------|------------|------------|------------|---------|
| AUGUST 2004 | | _ | _ | _ | _ | _ | | | | | | | ANTITI | | | | | 4- | | | | | | | |
| HOUR (UT) DAY | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| 1 | 100 | -99 | 0.0 | 107 | 105 | 105 | 102 | 100 | -101 | 101 | 100 | -99 | -97 | -97 | 0.6 | -93 | -93 | | 100 | 100 | -101 | 0.4 | 07 | 0.0 | -99 |
| 2 | -102 | -99 | -96 | -107 | -105 | -105 | -103 | -102 | -101 | -101 | -100 | -99 -99 | -97 -98 | -9 <i>1</i> | | -93 -92 | -93 -90 | -94 | | -102 | | -94 -96 | -97 -93 | -98 -97 | -99 |
| 3 0 | -97 | _00 | -00 | -99 | -06 | -94 | | | -96 | | | -99 -96 | | | | -92 | | -94 | -96 | | -100 | | | | |
| 4 O | -97 -96 | | -95 | | | | | -96 | | -96 | | -90 | -95 | -92 | -90 | | | | | | | -91 | -96 | -96 | |
| - · · · · · · · · · · · · · · · · · · · | -90 | -95 | -95 | -95 | -94 | -93 | | | -94 | | | | | | | | | | | | | -93 | | | |
| 3 | | | | | | | - 32 | - 32 | - 34 | -95 | -95 | | | | | | | | | | | -93 | | | |
| 6 | | | | -100 | -100 | -97 | -95 | -95 | -95 | -95 | -97 | -96 | | -91 | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 Q | | | | | | | | | | | -97 | -97 | -97 | -95 | -92 | -90 | -90 | -91 | -95 | -99 | -100 | -99 | -99 | -99 | |
| 9 | -98 | -98 | -97 | -98 | | | | | | | | | | | | | | -90 | -85 | -88 | -87 | -85 | -96 | | |
| 10 D | | -107 | -114 | -111 | -107 | -103 | -101 | -98 | -97 | -97 | -97 | -96 | -96 | -97 | -89 | -91 | -86 | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | -86 | -96 | | | | | | | | | | -96 | -94 | |
| 12 | -94 | -96 | -95 | -96 | -96 | -94 | -92 | -91 | -92 | -94 | -94 | | | | -86 | -85 | -84 | -87 | -95 | -98 | -97 | -91 | -92 | -94 | -93 |
| 13 | -93 | -92 | -87 | -89 | -89 | -91 | -91 | -92 | -92 | -93 | -93 | -92 | -93 | -90 | -88 | -86 | -85 | -84 | -84 | -93 | -97 | -96 | | | -91 |
| 14 | -100 | | | -99 | | -94 | | -90 | | | | | | | | | | -84 | -89 | -95 | | -92 | -92 | | |
| 15 | -91 | -91 | -90 | -91 | -91 | -91 | -91 | -91 | -91 | -92 | -92 | | | | | | | | | | -95 | -93 | -93 | -93 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | -92 | -93 | -93 | -93 | -90 | | -91 | | -92 | -94 | -93 | -92 | -90 | -87 | -80 | -77 | -79 | -80 | | -94 | | | | | |
| 17 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | -93 | | -92 | -88 | -84 | -79 | -79 | -83 | -86 | | -94 | | | -92 | |
| 19 | -94 | -95 | -94 | | | | | | | | | | | | | | | | | | | | | | |
| 20 D | | | | -89 | -91 | -88 | -81 | -79 | -80 | -82 | -86 | -89 | -85 | -83 | -75 | -76 | -78 | -80 | -86 | | | | | -95 | |
| 04 - | | | | =- | =- | | | | | | | | | | | | | =- | | | | | | | |
| 21 D | | -93 | | _ | | | | | | | | | -88 | | | | | . • | -88 | | | -97 | | -92 | |
| 22 | -87 -95 | -99 | | | | -84 | -// | - / 4 | - 78 | - / 9 | -84 | -89 | -84 | -87 | -84 | -76 | -/5 | -89 | -95 | -97 | -97 | -94 | -93 | -98 | -88 |
| 23 | -95 | | | | | | | | | | | -90 | -88 | -86 | -82 | -77 | | | -87 | -94 | -93 | | | -91 | |
| 24 Q 25 O | | | | | | | | | | | | | | | | | | | | | -93 -91 | | | | -86 |
| 25 Q | -91 | -92 | -92 | -90 | -89 | -88 | -85 | -86 | -87 | -89 | -92 | -92 | -88 | -83 | -/6 | -75 | -/4 | -// | -82 | -88 | -91 | | | | -86 |
| 26 | | | | | | | | | | | | -89 | -89 | -88 | -82 | -77 | -74 | -74 | -79 | -86 | -89 | -86 | -85 | -86 | |
| 27 | -84 | -84 | -91 | -92 | -90 | -88 | -84 | -84 | -86 | -87 | -87 | -89 | -87 | -85 | -78 | -75 | -74 | -78 | -82 | -84 | -89 | -91 | -92 | -88 | -85 |
| 28 | -90 | -91 | -92 | -89 | -91 | -85 | -84 | -80 | -72 | -80 | -84 | -86 | -86 | -84 | -79 | -76 | -72 | -73 | -81 | -88 | -89 | -89 | -90 | -89 | -84 |
| 29 | -89 | -88 | -87 | -85 | -81 | -83 | -84 | -85 | -86 | -87 | -90 | -91 | -89 | -86 | -75 | -71 | -69 | -74 | -82 | -87 | -83 | -84 | -85 | -86 | -84 |
| 30 D | -85 | -85 | -80 | -76 | -80 | -84 | -83 | -73 | -59 | -54 | -48 | -64 | | | -60 | | | | | -108 | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 31 D | | | | | | | | | | | | | | | | | | | | | | -107 | -106 | -104 | |
| MEAN | | | | | | | | | | | | | | | | | | | | | | | | | |
| MEAN O | | | | | | | | | | | -95 | -94 | | | | | | | | | | | | | |
| MEAN D | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |

| | IGSTON I | SLAND | MAGN | ETIC | OBSER | VATOR | Y | E. | - 355 | በበ ከሞ | פוז.זם י | TARII | TOTAL | INTEN | | INTTQ | ъ Т\ | | | | | | | | | |
|--------|----------|-------|------|----------|-------|-------|-----|-----|--------------|-------|----------|-------|-------|-------|-----|-------|-------------|-----|-----|-----|-----|-----|-----|-----|-----|---------|
| HOUR (| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | - 333 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DAY | (01) | Ū | - | _ | | - | , | Ū | • | Ū | | -0 | | | -3 | | 13 | -0 | | | | 20 | | | 23 | HILITIN |
| 1 | | 306 | 292 | 295 | 312 | 310 | 313 | 312 | 312 | 312 | 312 | 313 | 312 | 310 | 309 | 303 | 298 | 297 | | 307 | 311 | 308 | 297 | 301 | 304 | 306 |
| 2 | | | | | | | | | | | | | 312 | 310 | 307 | 305 | 301 | 300 | 304 | 309 | 311 | 311 | 305 | 298 | 303 | |
| 3 Q |) | 305 | 307 | 308 | 313 | 311 | 309 | 306 | 309 | 309 | 310 | 311 | 311 | 310 | 307 | 302 | | | | | | | 310 | 309 | 309 | |
| 4 0 | - | 310 | 310 | 310 | 310 | 309 | 308 | 309 | 311 | 312 | 313 | 314 | | | | | | | | | | | | | | |
| 5 | 4 | | | | | | | 309 | 308 | 311 | 313 | 315 | | | | | | | | | | | 306 | | | |
| J | | | | | | | | 303 | 500 | | 313 | 313 | | | | | | | | | | | 500 | | | |
| 6 | | | | | 310 | 314 | 312 | 310 | 310 | 311 | 312 | 315 | 315 | | 309 | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 C |) | | | | | | | | | | | 309 | 309 | 308 | 302 | 297 | 295 | 296 | 300 | 306 | 311 | 312 | 311 | 311 | 310 | |
| 9 | • | 309 | 310 | 307 | 308 | | | | | | | | | | | | | | 300 | 293 | 297 | 293 | 287 | 300 | | |
| 10 D |) | | 302 | 317 | 318 | 315 | 311 | 310 | 307 | 307 | 310 | 309 | 307 | 307 | 305 | 291 | 295 | 287 | | | | | | | | |
| | | | | - | 0_0 | 0_0 | | | | | 0_0 | | ••• | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | 306 | 301 | 309 | | | 290 | | | | | | | 309 | 302 | |
| 12 | | 302 | 304 | 305 | 311 | 311 | 308 | 309 | 309 | 310 | 312 | 312 | | | | 297 | 293 | 290 | 296 | 309 | 314 | 313 | 303 | 305 | 309 | 306 |
| 13 | | 311 | 310 | 301 | 302 | 302 | 305 | 307 | 307 | 307 | 309 | 310 | 309 | 308 | 301 | 298 | 294 | 294 | 292 | 292 | 306 | 312 | 312 | 297 | | 304 |
| 14 | | 314 | 313 | 312 | 317 | 314 | 313 | 316 | 313 | 310 | 308 | | 312 | | | | | | 293 | 303 | 310 | 311 | 307 | 307 | 304 | |
| 15 | | 306 | 307 | 307 | 308 | 308 | 308 | 308 | 309 | 310 | 311 | 313 | | | | | | | | | | 308 | 307 | 307 | 306 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | | 306 | 308 | 309 | 310 | 308 | 309 | 309 | 310 | 312 | 316 | 316 | 316 | 310 | 302 | 289 | 284 | 286 | 288 | 295 | 308 | | | | | |
| 17 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | | | | | | | 303 | | | | 305 | 313 | 312 | 309 | 301 | 294 | 288 | 286 | 293 | 299 | 305 | 308 | 308 | 308 | 302 | |
| 19 | | 307 | 310 | 310 | 308 | | | | | | | | | | | | | | | | | | | | | |
| 20 D |) | | | | 302 | 308 | 306 | 298 | 295 | 297 | 298 | 304 | 308 | 306 | 301 | 285 | 285 | 286 | 290 | 299 | | | | | 309 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 D |) | 307 | 303 | 312 | 278 | 284 | 298 | | | | 304 | | 302 | 306 | 301 | | | | 288 | 302 | 299 | 305 | 309 | 296 | 299 | |
| 22 | | 287 | 307 | 309 | 311 | 310 | 302 | 293 | 289 | 293 | 298 | 299 | 306 | 297 | 297 | 292 | 279 | 278 | 299 | 308 | 311 | 308 | 302 | 302 | 309 | 299 |
| 23 | | 304 | | | | | | | | | | | | | | | | | | | | | | | | |
| 24 Ç | 2 | | | | | | | | | | | | 308 | 306 | 301 | 293 | 288 | 285 | | 301 | 309 | 308 | | | 307 | |
| 25 Q |) | 307 | 309 | 309 | 305 | 304 | 304 | 299 | 300 | 301 | 305 | 311 | 312 | 308 | 302 | 293 | 287 | 283 | 286 | 295 | 305 | 308 | | | | 302 |
| | - | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | | 311 | 311 | 308 | 296 | 287 | 285 | 287 | 295 | 303 | 308 | 304 | 302 | 301 | |
| 27 | | 298 | 292 | 306 | 311 | 311 | 309 | 303 | 302 | 306 | 307 | 308 | 309 | 305 | 299 | 288 | 281 | 279 | 287 | 292 | 293 | 302 | 304 | 305 | 301 | 300 |
| 28 | | 304 | 308 | 309 | 306 | 314 | 307 | 307 | 302 | 293 | 305 | 307 | 308 | 305 | 299 | 292 | 288 | 284 | 285 | 294 | 303 | 303 | 304 | 306 | 307 | 302 |
| 29 | | 307 | 307 | 306 | 305 | 299 | 301 | 303 | 305 | 307 | 308 | 316 | 319 | 316 | 311 | 296 | 290 | 289 | 295 | 305 | 311 | 305 | 307 | 309 | 312 | 305 |
| 30 D |) | 312 | 312 | 302 | 293 | 296 | 301 | 303 | 295 | 287 | 286 | 279 | 290 | | | 259 | | | | | 293 | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 31 D |) | | | | | | | | | | | | | | | | | | | | | | 303 | 304 | 299 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MEAN | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MEAN | Q | | | | | | | | | | | 311 | 311 | | | | | | | | | | | | | |
| MEAN | D | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |

| LIVING | STON ISLA | ND | MAGN | ETIC | OBSER | VATOR | Y | | | | | | DECL | INATION | EAST | | | | | | | | | | | |
|---------|-----------|----|------|------|-------|-------|-----|-----|-----|-------|-------|------|-------|---------|-------|-------|------|-------|---------|-----|-----|-----|-----|-----|-----|------|
| SEPTEM | BER 2004 | | | | | | | | D = | 14 DE | GREES | PLUS | TABUI | LAR QUA | NTITI | ES (U | NITS | 0.1 M | INUTES) | | | | | | | |
| HOUR (U | T) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 40 | 9 | 416 | 408 | 409 | 419 | | | | | | | | | | | | | | | | | | | | |
| 2 | | - | | | 414 | 416 | 422 | 422 | | | | | | | | | | | | | | | | | | |
| 3 Q | | - | | | | | | | | 412 | 412 | | | | 389 | 391 | 405 | 421 | 437 | 445 | 442 | 431 | 423 | 419 | 417 | |
| 4 Q | 41 | .4 | 408 | 409 | 408 | 408 | 408 | | | | | | | | | | | | | | 440 | 429 | 422 | 417 | 413 | |
| 5 | 40 | 5 | 410 | | 404 | 401 | 397 | 397 | | | | | | 373 | 382 | 395 | 417 | | | | | | 428 | 422 | 425 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 D | 41 | .5 | 415 | 413 | 410 | 407 | 405 | 395 | 374 | 396 | 398 | 399 | 400 | 404 | 410 | 412 | 427 | 450 | 468 | 456 | 446 | 441 | 433 | 385 | 376 | 414 |
| 7 | 40 | 9 | 410 | 407 | 395 | 384 | 375 | 339 | | | | | | | | | | | | | | | | 423 | 423 | |
| 8 | 40 | 3 | 394 | 395 | 392 | 374 | 362 | 371 | 388 | 427 | 409 | 405 | | | | | | | | | 440 | 430 | 420 | 414 | 410 | |
| 9 | 41 | .0 | | | 403 | | | | 406 | 408 | 408 | | | | | | | | | | | | | | | |
| 10 Q | | - | | | | 401 | 399 | 396 | 398 | 400 | 395 | 401 | 398 | 381 | 378 | 390 | 416 | 442 | 457 | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 Q | | - | | | | | | 407 | 406 | 406 | 406 | 403 | 393 | 374 | 374 | 390 | 416 | 445 | 459 | | | | | | | |
| 12 Q | | - | | | | | | | | | | | 390 | 377 | 375 | 385 | 406 | 428 | 447 | 452 | 440 | 423 | 416 | 410 | 408 | |
| 13 | 40 | 9 | 411 | 414 | 417 | 420 | 420 | 420 | 419 | 416 | 412 | 407 | 394 | 377 | 368 | 372 | 396 | 422 | 445 | 457 | 451 | 404 | 393 | 402 | 420 | 411 |
| 14 D | 42 | 2 | 419 | 400 | 361 | 378 | 344 | 348 | 368 | 394 | 398 | 397 | 416 | 389 | 378 | 390 | 413 | 443 | 466 | 491 | 463 | 451 | 444 | 433 | 375 | 408 |
| 15 | 38 | 9 | 383 | 361 | 377 | 430 | 427 | 423 | 430 | 430 | 430 | 439 | 440 | 398 | 381 | 411 | 440 | 466 | 467 | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 D | | - | | | 391 | | 380 | 403 | 409 | 403 | 391 | 399 | 397 | 410 | 396 | 406 | 428 | 459 | | | | | | | | |
| 17 D | | - | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | | - | | | | | | | | | | | | | | | | | | | | | | 421 | 419 | |
| 19 | 41 | .7 | 415 | 416 | | | 412 | 410 | 407 | 402 | 401 | 402 | 392 | 377 | 372 | | | | | | | | | | | |
| 20 | | - | | | | | 401 | 396 | | | | | | | 390 | 405 | 420 | 436 | 450 | 450 | 446 | 433 | 422 | 417 | 416 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | 40 | 8 | 375 | 387 | 388 | 362 | | | | | | | | 387 | | | | | | 471 | 459 | 435 | 426 | 418 | 412 | |
| 22 D | 41 | .1 | 406 | 404 | 402 | 402 | 406 | 405 | 396 | 402 | 390 | 385 | | | | | | | | | 485 | | 440 | 425 | 391 | |
| 23 | 40 | 0 | 400 | 356 | 353 | 385 | 389 | 389 | 408 | 406 | 407 | 404 | 397 | 385 | 388 | 404 | 425 | 441 | 448 | 453 | 445 | 432 | 418 | 407 | 402 | 406 |
| 24 | 39 | 9 | 393 | 367 | 375 | 398 | 410 | 410 | 410 | 407 | 404 | 398 | 387 | 378 | 379 | 389 | 411 | 431 | 448 | 456 | 446 | 431 | 413 | 402 | 409 | 406 |
| 25 | 40 | 5 | | | | | | | | 402 | | | | | | | | 446 | 461 | 464 | 455 | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | 40 | 7 | | | 409 | 410 | 409 | | | | 396 | 390 | | 378 | 385 | 401 | 417 | 433 | 445 | 451 | 447 | | | 404 | 398 | |
| 27 | 40 | 2 | 408 | 408 | 407 | 406 | 401 | 399 | 397 | 399 | 394 | 387 | 385 | 385 | 381 | 394 | | | | | | | | | | |
| 28 | | - | | | | 374 | 386 | 397 | 376 | 397 | 377 | 383 | 378 | 377 | 389 | 400 | 416 | 437 | 452 | 452 | 442 | 426 | 416 | 408 | 407 | 403 |
| 29 | 41 | .3 | 412 | 408 | 405 | 400 | 400 | 396 | 396 | 394 | 392 | 392 | 382 | 374 | 371 | 380 | 397 | 422 | 444 | 445 | 442 | 429 | 415 | 407 | 398 | 405 |
| 30 | 39 | 3 | 395 | 402 | 404 | 403 | | | | | | | 379 | 373 | 378 | 387 | 409 | 437 | 452 | 458 | 452 | 434 | 417 | 413 | 411 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MEAN | | - | | | | | | | | | | | | | | | | | | | | | | | | |
| MEAN Q | | - | | | | | | | | | | | | | | | | | | | | | | | | |
| MEAN D | | - | | | | | | | | | | | | | | | | | | | | | | | | |

| | | TON ISLAND | MAGN | NETIC | OBSER | VATOR | RΥ | | | 20000 | | | | CONTAL | | | ·mo m | 18 | | | | | | | | |
|----|--------|------------|------|-------|-------|-------|-----|----------|-----|--------------|-----|-----|------|--------|-----|------|-------|-----|-----|-----|-----|-----|-----|-----|-----|----------|
| | | ER 2004 | _ | _ | _ | | _ | _ | | | | | | QUANT | | • | | • | | | | | | | | |
| | UR (UT |) 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DA | _ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | | 161 | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | 156 | 157 | | 162 | | | | | | | | | | | | | | | | | | |
| 3 | ~ | | | | | | | | | 160 | 161 | | | | 158 | 151 | 146 | 144 | 142 | 147 | _ | 158 | 160 | 159 | 161 | |
| | Q | 162 | | 167 | | | | | | | | | | | | | | | | | 163 | 168 | | 170 | 171 | |
| 5 | | 173 | 172 | | 175 | 175 | 175 | 172 | | | | | | 171 | 158 | 142 | 137 | | | | | | 161 | 162 | 164 | |
| | D | 159 | 165 | 165 | 168 | 166 | 166 | | 166 | 165 | 174 | 158 | 161 | 156 | 150 | 142 | 139 | 137 | 133 | 153 | 155 | 159 | 158 | 157 | | 157 |
| 7 | | 153 | 155 | 161 | 161 | 164 | 168 | 168 | | | | | | | | | | | | | | | | 156 | 159 | |
| 8 | | 154 | 156 | 153 | 153 | 160 | 152 | 149 | 150 | 157 | 163 | 162 | | | | | | | | | 152 | 155 | 157 | 158 | 159 | |
| 9 | | 159 | | | 163 | | | | 164 | 163 | 165 | | | | | | | | | | | | | | | |
| 10 | Q | | | | | 162 | 162 | 160 | 159 | 161 | 163 | 163 | 168 | 165 | 154 | 139 | 131 | 132 | 140 | | | | | | | |
| 11 | Q | | | | | | | 165 | 165 | 166 | 169 | 171 | 169 | 159 | 147 | 137 | 134 | 137 | 143 | | | | | | | |
| 12 | Q | | | | | | | | | | | | 165 | 158 | 147 | 136 | 131 | 132 | 144 | 155 | 165 | 167 | 164 | 164 | 164 | |
| 13 | | 164 | 164 | 165 | 167 | 170 | 172 | 175 | 176 | 176 | 176 | 178 | 177 | 170 | 158 | 144 | 135 | 136 | 143 | 154 | 166 | 181 | 178 | 184 | 182 | 166 |
| 14 | D | 186 | 170 | 170 | 170 | 159 | 167 | 175 | 150 | 156 | 161 | 154 | 152 | 164 | 153 | 146 | 137 | 137 | 152 | 150 | 138 | 132 | 116 | 118 | 106 | 151 |
| 15 | | 120 | 136 | 136 | 138 | 152 | 155 | 153 | 154 | 158 | 160 | 165 | 165 | 153 | 141 | 119 | 116 | 125 | 131 | | | | | | | |
| 16 | D | | | | 154 | | 166 | 160 | 168 | 162 | 165 | 165 | 158 | 148 | 144 | 132 | 126 | 132 | | | | | | | | |
| 17 | D | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | | | | | | | | | | | | | 164 | |
| 19 | | | 165 | | | | 162 | 162 | 164 | 162 | 164 | 169 | 173 | 167 | 153 | | | | | | | | | | | |
| 20 | | | | | | | 167 | 168 | | | | | | | 155 | 139 | 133 | 138 | 144 | 150 | 157 | 160 | 161 | 164 | 164 | |
| 21 | | 166 | 162 | 160 | 156 | 156 | | | | | | | | 163 | | | | | | 155 | 163 | 162 | 160 | 163 | 166 | |
| 22 | D | 165 | 164 | 165 | 166 | 168 | 168 | 172 | 179 | 175 | 172 | 173 | | | | | | | | | 156 | | 151 | 140 | 126 | |
| 23 | | 127 | 137 | 140 | 144 | 153 | 175 | 157 | 156 | 157 | 159 | 160 | 157 | 153 | 142 | 138 | 133 | 139 | 145 | 153 | 160 | 159 | 156 | 149 | 147 | 150 |
| 24 | | 152 | 149 | 146 | 153 | 161 | 164 | 162 | 162 | 163 | 165 | 164 | 164 | 154 | 147 | | 135 | 132 | 137 | | | | 159 | | 161 | 154 |
| 25 | | 163 | | | | | | | | | | | | | | | | 127 | 135 | _ | | | | | | |
| 26 | | 163 | | | 167 | 167 | 171 | | | | 167 | 166 | | 157 | 148 | 141 | 139 | 141 | 147 | 155 | 155 | | | 155 | 161 | |
| 27 | | | | 172 | | | | | 172 | | | 173 | | | 157 | 143 | | | | | | | | | | |
| 28 | | | | | | 166 | _ | _ | | | 169 | | | | 148 | _ | 140 | | | | 166 | 169 | 162 | 158 | 158 | 161 |
| 29 | | | | 172 | | | | | | | 172 | | | 168 | 159 | | 142 | | 157 | | 169 | 169 | | | 166 | 166 |
| 30 | | | | 174 | | | | | | | | | | | | | 138 | _ | | | 165 | | | | | |
| 30 | | 109 | 1,1 | 1/4 | 1/4 | 1/3 | | - | | _ | | | ⊥/~≥ | 100 | 133 | T-32 | 130 | 139 | 143 | 139 | 103 | 100 | | | | - |

MEAN Q MEAN D

| LIVINGSTON ISLAND | MAGNETIC | OBSERVATORY | VERTICAL | INT |
|-------------------|----------|-------------|----------|-----|
| LIVINGSTON ISLAND | MAGNETIC | OBSERVATORY | VERTICAL | 11 |

| LIVINGSTON SEPTEMBER 2 | | MAGN | ETIC | OBSER | VATOR | Y | | | 00500 | · III - | | | CAL IN | | | ·mo m | | | | | | | | | |
|---------------------------|--------|------|------|-------|-------|-----|-----|-----|-------|---------|-----|-----|--------|-----|-----|-------|-----|-----|-----|-----|-----|-----|-----|-----|------|
| | | _ | _ | _ | | _ | _ | | | | | | QUANT | | | | | | | | | | | | |
| HOUR (UT) DAY | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| 1 | -105 - | -105 | -102 | -94 | -96 | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | -95 | -92 | -91 | -85 | | | | | | | | | | | | | | | | | | |
| 3 Q | | | | | | | | | -90 | -91 | | | | -87 | -82 | -76 | -75 | -75 | -81 | -90 | -94 | -95 | -94 | -93 | |
| 4 Q | -93 | -94 | -94 | -90 | -89 | -89 | | | | | | | | | | | | | | -88 | -91 | -91 | -91 | -90 | |
| 5 | -90 | -88 | | -88 | -87 | -85 | -83 | | | | | | -82 | -77 | -71 | -66 | | | | | | -94 | -93 | -93 | |
| - | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 D | -91 | -92 | -91 | -91 | -88 | -87 | -83 | -77 | -79 | -79 | -76 | -85 | -81 | -79 | -76 | -76 | -72 | -69 | -86 | -90 | -94 | -93 | -97 | -93 | -84 |
| 7 | | | | | -87 | | -65 | | | | | | | | | | | | | | | | -93 | -93 | |
| 8 | | | -91 | | | -79 | -79 | -80 | -81 | -88 | -89 | | | | | | | | | -93 | -96 | -96 | -94 | -93 | |
| 9 | -91 | | | | | | | | | -88 | | | | | | | | | | | | | | | |
| 10 0 | | | | | -85 | -84 | -83 | • | -85 | | -84 | -87 | -87 | -79 | -70 | -66 | -68 | -75 | | | | | | | |
| - · · · · · | | | | | • | | | | - | | | • | • | | . • | | | . • | | | | | | | |
| 11 0 | | | | | | | -84 | -84 | -84 | -85 | -87 | -88 | -86 | -81 | -75 | -69 | -68 | -77 | | | | | | | |
| 12 0 | | | | | | | | | | | | -87 | | | | -69 | | -75 | -83 | -90 | -92 | -87 | -85 | -84 | |
| 13 | -82 | -81 | -81 | -81 | -82 | -83 | -84 | -84 | -84 | -83 | -83 | | | | -69 | | -62 | | -73 | | -98 | | | -90 | -81 |
| 14 D | | -85 | | -91 | | -68 | | | -76 | | | -57 | | -72 | -70 | | -57 | -71 | -74 | | -94 | | -99 | | -77 |
| 15 | | | -95 | -87 | | -92 | | -90 | | | -88 | _ | -85 | . – | | -62 | _ | -76 | | | | | | | |
| 13 | 30 | 0-2 | ,,, | 0, | 00 | 72 | 72 | 30 | ,,, | 71 | 00 | 03 | 03 | 01 | 03 | 02 | 03 | , 0 | | | | | | | |
| 16 D | | | | -87 | | -82 | -72 | -79 | -82 | -80 | -81 | -81 | -75 | -80 | -70 | -62 | -67 | | | | | | | | |
| 17 D | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | | | | | | | | | | | | -86 | |
| 19 | | -85 | | | | -82 | -83 | -84 | -83 | -84 | -85 | -88 | -85 | -76 | | | | | | | | | | | |
| 20 | | | | | | -86 | -86 | | | | | | | -62 | -56 | -54 | -57 | -63 | -72 | -77 | -84 | -88 | -89 | -88 | |
| | | | | | | | | | | | | | | | | - | - | | | | | | | | |
| 21 | -89 | -87 | -83 | -82 | -77 | | | | | | | | -77 | | | | | | -69 | -82 | -88 | -86 | -86 | -88 | |
| 22 D | -86 | -85 | -85 | -84 | -83 | -82 | -83 | -87 | -80 | -80 | -80 | | | | | | | | | -86 | | -97 | -95 | -90 | |
| 23 | -91 | -92 | -83 | -85 | -94 | -73 | -75 | -87 | -88 | -88 | -87 | -87 | -87 | -80 | -73 | -68 | -71 | -75 | -81 | -87 | -93 | -93 | -90 | -89 | -84 |
| 24 | -88 | -90 | -85 | -84 | -86 | -88 | -87 | | -85 | -85 | -83 | -85 | -81 | -75 | -71 | -68 | -69 | -71 | -80 | -84 | -90 | -89 | -89 | -86 | -83 |
| 25 | -86 | | | | | | | | -82 | | | | | | | | | -72 | -78 | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | -87 | | | -84 | -83 | -83 | | | | -83 | -83 | | -78 | -72 | -67 | -67 | -70 | -74 | -79 | -81 | | | -85 | -85 | |
| 27 | -85 | -86 | -85 | -85 | -84 | -84 | -83 | -81 | -80 | -80 | -82 | -80 | -74 | -68 | -63 | | | | | | | | | | |
| 28 | | | | | -81 | -81 | -83 | -75 | -77 | -74 | -74 | -73 | -69 | -65 | -64 | -65 | -67 | -71 | -77 | -84 | -88 | -85 | -85 | -82 | -77 |
| 29 | -84 | -84 | -84 | -84 | -83 | -82 | -82 | -80 | -78 | -80 | -77 | -77 | -75 | -71 | -64 | | | -67 | -70 | -81 | -86 | -86 | -84 | -84 | -78 |
| 30 | | | -81 | | -80 | | | | | | | -79 | | . – | | -62 | | | -72 | -80 | -84 | | | | |
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| MEAN D | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | | MAGN | ETIC | OBSERVATORY | | | | E - 35500 pm Di | | | | TOTAL INTENSITY US TABULAR QUANTITIES | | | /IINIT | יחפ הח | ١١ | | | | | | | | |
|---------------------------|------|------|------|------|-------------|-----|-----|-----|-----------------|-------|-----|-------|---------------------------------------|-----|-----|--------|--------|-----|-----|-----|-----|-----|-----|-----|-----|------|
| SEPTEMBER 20 HOUR (UT) | | 2004 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 33300 | 9 | 103 1 | . ABULAK 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DAY | | U | _ | | 3 | - | 3 | U | , | Ü | , | 10 | | 12 | 13 | 17 | 13 | 10 | 1, | 10 | 19 | 20 | 21 | 22 | 23 | MEAN |
| 1 | | 303 | 308 | 315 | 303 | 304 | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | 307 | 305 | 308 | 302 | | | | | | | | | | | | | | | | | | |
| 3 | Q | | | | | | | | | 305 | 306 | | | | 302 | 293 | 285 | 283 | 282 | 290 | 302 | 307 | 309 | 308 | 308 | |
| 4 | Õ | 309 | 310 | 312 | 308 | 307 | 309 | | | | | | | | | | | | | | 305 | 310 | 310 | 311 | 311 | |
| 5 | × | 312 | 310 | | 312 | 311 | 309 | 306 | | | | | | 304 | 293 | 280 | 273 | | | | | | 309 | 309 | 309 | |
| • | | 312 | 310 | | 312 | 311 | 303 | 300 | | | | | | 304 | 233 | 200 | 2,3 | | | | | | 505 | 303 | 303 | |
| 6 | D | 305 | 310 | 308 | 310 | 307 | 306 | 305 | 297 | 299 | 303 | 292 | 301 | 295 | 290 | 283 | 281 | 277 | 272 | 298 | 302 | 308 | 306 | 310 | 304 | 299 |
| 7 | _ | 300 | 303 | 305 | 307 | 305 | 298 | 289 | | | | | | | | | | | | | | | | 305 | 307 | |
| 8 | | 304 | 305 | 302 | 299 | 302 | 292 | 289 | 292 | 296 | 305 | 305 | | | | | | | | | 303 | 307 | 308 | 307 | 307 | |
| 9 | | 305 | | | 306 | | | | 305 | 303 | 306 | | | | | | | | | | | | | | | |
| | 0 | | | | | 302 | 301 | 299 | 299 | 302 | 304 | 302 | 307 | 306 | 292 | 277 | 269 | 271 | 282 | | | | | | | |
| | ×. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | 0 | | | | | | | 303 | 302 | 304 | 306 | 309 | 308 | 302 | 291 | 280 | 272 | 274 | 285 | | | | | | | |
| 12 | ~ | | | | | | | | | | | | 305 | 299 | 288 | 276 | 271 | 271 | 283 | 296 | 308 | 310 | 305 | 303 | 302 | |
| 13 | ~ | 301 | 300 | 300 | 302 | 304 | 307 | 308 | 309 | 309 | 308 | 309 | 309 | 303 | 293 | 279 | 267 | 268 | 276 | 288 | 304 | 324 | 316 | 323 | 318 | 301 |
| 14 | D | 324 | 306 | 310 | 312 | 294 | 291 | 272 | 264 | 291 | 302 | 289 | 273 | 292 | 286 | 281 | 269 | 265 | 284 | 286 | 286 | 292 | 284 | 288 | 285 | 289 |
| 15 | _ | 289 | 286 | 295 | 290 | 299 | 304 | 302 | 301 | 306 | 306 | 306 | 304 | 297 | 287 | 261 | 257 | 268 | 277 | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | D | | | | 299 | | 302 | 290 | 300 | 300 | 299 | 300 | 296 | 286 | 288 | 273 | 263 | 270 | | | | | | | | |
| 17 | D | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | | | | | | | | | | | | 304 | 304 | |
| 19 | | 304 | 304 | 303 | 301 | 300 | 300 | 300 | 303 | 300 | 302 | 305 | 310 | 305 | 289 | | | | | | | | | | | |
| 20 | | | | | | | 306 | 306 | | | | | | | 280 | 265 | 260 | 266 | 274 | 284 | 293 | 300 | 304 | 307 | 305 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | | 308 | 304 | 299 | 296 | 292 | | | | | | | | 296 | | | | | | 285 | 300 | 305 | 302 | 303 | 307 | |
| 22 | D | 304 | 303 | 303 | 303 | 304 | 303 | 306 | 313 | 305 | 304 | 304 | | | | | | | | | 299 | | 305 | 298 | 286 | |
| 23 | | 287 | 294 | 288 | 292 | 304 | 299 | 291 | 300 | 301 | 302 | 303 | 301 | 298 | 286 | 278 | 272 | 277 | 284 | 294 | 303 | 307 | 305 | 299 | 297 | 294 |
| 24 | | 299 | 299 | 293 | 296 | 302 | 305 | 303 | 302 | 303 | 304 | 301 | 303 | 294 | 285 | 278 | 273 | 272 | 276 | 289 | 296 | 304 | 304 | 305 | 302 | 295 |
| 25 | | 303 | | | | | | | | 302 | | | | | | | | 268 | 276 | 286 | 297 | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | | 304 | | | 304 | 303 | 305 | | | | 303 | 302 | | 293 | 283 | 275 | 274 | 277 | 285 | 293 | 295 | | | 298 | 302 | |
| 27 | | 303 | 307 | 308 | 309 | 308 | 308 | 308 | 304 | 303 | 304 | 305 | 302 | 295 | 285 | 273 | | | | | | | | | | |
| 28 | | | | | | 301 | 302 | 308 | 298 | 303 | 297 | 296 | 292 | 285 | 278 | 273 | 273 | 277 | 285 | 295 | 304 | 309 | 302 | 299 | 297 | 295 |
| 29 | | 304 | 305 | 307 | 308 | 307 | 306 | 305 | 303 | 301 | 303 | 301 | 302 | 297 | 289 | 276 | 271 | 272 | 284 | 288 | 302 | 307 | 305 | 302 | 303 | 298 |
| 30 | | 305 | 305 | 306 | 304 | 305 | | | | | | | 304 | 297 | 284 | 275 | 269 | 269 | 278 | 290 | 299 | 304 | 307 | 306 | 305 | |
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| LIVINGSTON | | MAGN | ETIC | OBSER | VATOR | ĽΥ | | _ 14 | DECE | NEEC F | m | DECLI ABULAR | NATION | | | т О | 1 MTN | TIME C \ | | | | | | | |
|----------------------|------------|------------|------|-------|------------|------------|------------|------------|------------|------------|-------------|-----------------|-------------|------------|------------|--------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| HOUR (UT) | 0 | 1 | 2 | 3 | 4 | 5 | ر 1 | 7 | DEGR | (EES F | ъоз 1 10 | ABULAR | QUANT 12 | 11115 | (UNI 14 | .TS U. 15 | 1 MIN | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DAY | U | _ | 2 | 3 | 4 | 3 | • | , | 0 | 9 | 10 | 11 | 12 | 13 | 14 | 13 | 10 | 1, | 10 | 19 | 20 | 21 | 22 | 23 | MEAN |
| 1 | 409 | 406 | 403 | 403 | 404 | 404 | 403 | 404 | 398 | 393 | 381 | 373 | 368 | 372 | 389 | 416 | 446 | 467 | 470 | 450 | 427 | 411 | | | 409 |
| 2 | 406 | | | | | | 372 | | | | | | | | | | | | | | | | | | |
| 3 | | | | | 400 | 385 | 372 | 365 | 374 | 355 | 359 | 376 | 385 | 399 | 440 | 450 | 472 | 491 | 505 | 479 | 476 | | | 444 | |
| 4 D | | | 410 | 402 | 364 | 374 | 396 | 408 | 407 | 389 | 383 | 376 | 381 | 387 | 406 | 438 | 457 | 473 | 487 | 480 | 452 | 435 | 434 | 393 | 415 |
| 5 | 402 | 408 | 411 | 409 | 404 | 404 | 404 | 400 | 403 | 402 | 396 | | 384 | | | | | | | 459 | 437 | 422 | 423 | 420 | |
| - | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | 415 | 415 | 414 | 410 | 400 | 390 | 390 | 400 | 390 | 389 | 396 | 390 | 388 | 395 | 406 | 427 | 451 | 469 | 479 | 465 | 445 | 427 | 420 | | 416 |
| 7 Q | 414 | 415 | 413 | 401 | | | | | | | 381 | 374 | 372 | 381 | 400 | 418 | 438 | 455 | 455 | 447 | 433 | | | 415 | |
| 8 | | | | 404 | 394 | 375 | 376 | 373 | 372 | 367 | 368 | 364 | 370 | 383 | 397 | 424 | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | 410 | 410 | 378 | | 396 | | | | | | | | | | | 416 | 439 | 452 | 451 | 448 | 436 | 427 | 424 | 418 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | 409 | 408 | 388 | 342 | 364 | 365 | 388 | 393 | 386 | 394 | 395 | 386 | 385 | 395 | 408 | 426 | 441 | 458 | 461 | 449 | 437 | 424 | 415 | 371 | 404 |
| 12 | 383 | 399 | 395 | 391 | 377 | 398 | 398 | 406 | 409 | 403 | 391 | 382 | 373 | 379 | 391 | 411 | 433 | 448 | 449 | 445 | 438 | 426 | 415 | 382 | 405 |
| 13 D | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 D | | | | | | 404 | | | | | | | | | | 448 | | | | 460 | 445 | 435 | 417 | 401 | |
| 15 | 408 | 414 | 407 | 382 | 390 | 398 | 401 | 402 | | 402 | | | 397 | 392 | 394 | 408 | 442 | 474 | 481 | 471 | 449 | 421 | 421 | 418 | 417 |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | 413 | 401 | 396 | 404 | 403 | 399 | 398 | 400 | 398 | 398 | 402 | 395 | 389 | 389 | 401 | 428 | 459 | 477 | 473 | 457 | 439 | 423 | 417 | | 416 |
| 17 Q | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | | | 404 | 402 | 397 | 395 | | 390 | 385 | 385 | 381 | 376 | 371 | 368 | 378 | 401 | 435 | 464 | 471 | 465 | 456 | 428 | 411 | 406 | 407 |
| 19 | 405 | 406 | 408 | 407 | 405 | 398 | 397 | 394 | 384 | 384 | 376 | 363 | 352 | 365 | 376 | 404 | 436 | 462 | 465 | 457 | 439 | 421 | 409 | 405 | 405 |
| 20 | 404 | 402 | 400 | 390 | 373 | 375 | 346 | 362 | 362 | 356 | 359 | 366 | | | | | | | | | | | 426 | 405 | |
| 01 | 275 | 200 | 410 | 403 | 358 | 352 | 270 | 401 | 204 | 270 | 376 | 382 | 200 | 200 | 411 | 405 | 443 | 460 | 460 | 464 | 440 | 420 | 410 | 410 | 407 |
| 21 22 | 375 | 398 | 410 | 403 | 358 406 | 352 400 | 379 | 401 395 | 384 389 | 385 | 376 | 382 377 | 388 | 399 382 | 411 | 425 441 | 443 468 | 460 | 469 | 464 | 448 433 | 430 415 | 418 406 | 410 406 | 407 412 |
| | 400 407 | 408 407 | 411 | 405 | 399 | 400 398 | 399 398 | 395 | 383 | 385 372 | 364 | 363 | 372 367 | 382 381 | 408 | 421 | 444 | 474 462 | 469 | 450 | 433 | 415 | 406 | 406 | 412 |
| 23 Q 24 | 407 | 407 | 408 | 404 | 403 | 398 | 394 | 387 | 384 | 382 | 371 | | 354 | 365 | 393 | 421 | 456 | 499 | 458 539 | 447 497 | 461 | 442 | 438 | 423 | 416 |
| 2 4 25 | 412 | 407 | 408 | 406 | 403 | 393 | 394 | 367 | 304 | 362 | 3/1 | 362 362 | 364 364 | 390 | 416 | 447 | 473 | 499 | 478 | 458 | 438 | 442 | 407 | 423 | 410 |
| 25 | 412 | | | | | | | | | | | 362 | 364 | 390 | 416 | 44/ | 4/3 | 490 | 4/6 | 456 | 436 | 420 | 407 | 407 | |
| 26 Q | 408 | 403 | 404 | 411 | 406 | 405 | 399 | 393 | 386 | 380 | 371 | 364 | 363 | 366 | 383 | 419 | 454 | 475 | 472 | 456 | 436 | 421 | 416 | 414 | 409 |
| 27 | 414 | 413 | 412 | 409 | 406 | 402 | 396 | | | | | | 362 | 375 | 400 | 427 | 459 | 480 | 472 | 449 | 433 | 423 | 418 | 415 | |
| 28 Q | 408 | 407 | 403 | 398 | 400 | 398 | 393 | 385 | 377 | 371 | 364 | 356 | 359 | 371 | 390 | 414 | 441 | 464 | 467 | 450 | | 418 | 416 | 415 | 404 |
| 29 | 412 | 411 | 409 | 407 | 404 | 399 | 393 | 382 | 370 | 355 | 343 | 341 | 366 | 385 | 395 | 427 | 464 | 489 | 501 | 509 | 471 | 442 | 421 | 417 | 413 |
| 30 D | 413 | 392 | 370 | 382 | 380 | 384 | 374 | 345 | 333 | 343 | 363 | 374 | 380 | 395 | 423 | 446 | | 470 | 462 | 458 | 452 | 460 | 418 | 424 | 405 |
| 30 B | 413 | 332 | 3,0 | 302 | 300 | 304 | 3/4 | 343 | 333 | 343 | 303 | 374 | 300 | 333 | 423 | 110 | 403 | 470 | 402 | 450 | 102 | 400 | 410 | 72.7 | 405 |
| 31 D | 424 | 421 | 411 | 409 | 402 | 392 | 394 | 389 | 383 | 374 | 368 | 365 | 376 | 397 | 421 | 444 | 465 | 464 | 468 | 463 | 443 | 406 | 417 | 421 | 413 |
| - | | | | | | | | | | -·- | | - | J. J | | | | | - | | | | | | | |
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| LIVINGSTON | ISLAND | MAGN | ETIC | OBSER | RVATOR | ĽΥ | | | | | | HORI | ZONTAL | INTEN | SITY | | | | | | | | | | |
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| OCTOBER 200 | 4 | | | | | | H | 1 = 20 | 0000 r | T PLU | S TAE | BULAR | QUANTIT | 'IES (| UNITS | nT) | | | | | | | | | |
| HOUR (UT) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
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| LIVINGSTON I | SLAND | MAGN | ETIC | OBSER | VATOR | Y | - | - 00 | NEOO | m | o man | | CICAL IN | | | m\ | | | | | | | | | |
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| HOUR (UT) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 23 Q | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 26 Q | | | | | | | | | | | | | | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 28 Q | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 30 D | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 31 D | | | | | | | | | | | | | | | | | | | | | | | | | |
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| MEAN | | | | | | | | | | | | | | | | | | | | | | | | | |
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| LIVINGSTON OCTOBER 200 | | MAGN | ETIC | OBSER | VATOR | ĽΥ | | - 25 | E00 | ייי דרו ייי | C MAD | | L INTEN | | TINITMO | · ~m\ | | | | | | | | | |
|---------------------------|-----|------|------|-------|-------|-----|-----|-----------|-----|-------------|-------|-----|---------------|-----|---------|-------|-----|-----|-----|-----|-----|-----|-----|-----|------|
| HOUR (UT) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | - 33 7 | 8 | 11 PLU | 3 IAE | 11 | 20AN111 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DAY | U | _ | 2 | 3 | - | 3 | U | , | 0 | 9 | 10 | 11 | 12 | 13 | 14 | 13 | 10 | 1, | 10 | 19 | 20 | 21 | 22 | 23 | MEAN |
| 1 | 305 | 305 | 304 | 303 | 303 | 302 | 302 | 305 | 303 | 303 | 305 | 301 | 291 | 278 | 267 | 262 | 267 | 279 | 297 | 307 | 314 | 309 | | | 296 |
| 2 | 309 | | | | | | 292 | | | | | | | | | | | | | | | | | | |
| 3 | | | | | 304 | 302 | 301 | 291 | 294 | 302 | 296 | 282 | 280 | 251 | 242 | 251 | 261 | 273 | 284 | 294 | 312 | | | 310 | |
| 4 D | | | 314 | 312 | 308 | 294 | 297 | 299 | 295 | 295 | 297 | 292 | 287 | 280 | 272 | 259 | 266 | 280 | 293 | 297 | 306 | 306 | 305 | 307 | 294 |
| 5 | 304 | 305 | 304 | 303 | 298 | 297 | 295 | 295 | 296 | 302 | 304 | | 289 | | | | | | | 311 | 312 | 310 | 299 | 299 | |
| 3 | 304 | 303 | 304 | 303 | 230 | 231 | 295 | 233 | 230 | 302 | 304 | | 203 | | | | | | | 311 | 312 | 310 | 233 | 233 | |
| 6 | 302 | 301 | 300 | 299 | 299 | 294 | 292 | 296 | 296 | 298 | 298 | 297 | 293 | 281 | 272 | 269 | 272 | 280 | 289 | 299 | 306 | 307 | 305 | | 294 |
| 7 0 | 305 | 305 | 303 | 307 | | | | | | | 299 | 295 | 286 | 278 | 270 | 268 | 271 | 281 | 293 | 302 | 306 | | | 308 | |
| 8 | | | | 309 | 309 | 305 | 304 | 303 | 302 | 299 | 298 | 293 | 284 | 274 | 268 | 261 | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | 297 | 300 | 291 | | 301 | | | | | | | | | | | 270 | 275 | 284 | 295 | 303 | 299 | 300 | 297 | 301 | |
| 10 | 23, | 500 | 231 | | 301 | | | | | | | | | | | 270 | 2,3 | 204 | 233 | 303 | 233 | 300 | 23, | 301 | |
| 11 | 303 | 301 | 294 | 298 | 288 | 283 | 284 | 295 | 291 | 292 | 295 | 296 | 287 | 274 | 264 | 265 | 278 | 282 | 292 | 299 | 302 | 296 | 298 | 291 | 289 |
| 12 | 299 | 303 | 302 | 295 | 290 | 292 | 298 | 301 | 293 | 291 | 295 | 293 | 283 | 269 | 265 | 262 | 266 | 276 | 287 | 299 | 305 | 313 | 304 | 291 | 290 |
| 13 D | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 D | | | | | | 298 | | | | | | | | | | 254 | | | | 298 | 313 | 311 | 305 | 312 | |
| 15 | 307 | 302 | 304 | 301 | 298 | 295 | 296 | 296 | | 288 | | | 291 | 279 | 270 | 259 | 257 | 265 | 280 | 293 | 303 | 305 | 308 | 304 | 291 |
| 13 | 307 | 302 | 304 | 301 | 230 | 233 | 230 | 230 | | 200 | | | 231 | 2,3 | 2,0 | 233 | 23, | 203 | 200 | 233 | 303 | 303 | 300 | 304 | 231 |
| 16 | 305 | 303 | 300 | 295 | 295 | 294 | 296 | 295 | 296 | 294 | 293 | 292 | 284 | 271 | 258 | 250 | 254 | 271 | 289 | 300 | 303 | 302 | 300 | | 289 |
| 17 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | | | 302 | 301 | 301 | 302 | 301 | 301 | 300 | 297 | 296 | 298 | 293 | 282 | 270 | 252 | 247 | 256 | 270 | 282 | 289 | 298 | 303 | 308 | 289 |
| 19 | 309 | 308 | 305 | 303 | 300 | 296 | 295 | 298 | 297 | 297 | 297 | 296 | 289 | 275 | 267 | 254 | 255 | 269 | 287 | 301 | 308 | 307 | 305 | 300 | 292 |
| 20 | 312 | 318 | 316 | 310 | 296 | 290 | 284 | 292 | 291 | | | 289 | | | | | | | | | | | 301 | 306 | |
| | J | 310 | 310 | 310 | | | | | | | | | | | | | | | | | | | 301 | 500 | |
| 21 | 298 | 304 | 307 | 310 | 295 | 287 | 284 | 295 | 291 | 291 | 281 | 276 | 272 | 265 | 261 | 259 | 263 | 273 | 285 | 297 | 305 | 304 | 304 | 308 | 288 |
| 22 | 302 | 304 | 304 | 298 | 298 | 300 | 301 | 300 | 300 | 298 | 294 | 284 | 272 | 259 | 249 | 251 | 258 | 266 | 286 | 295 | 306 | 307 | 303 | 303 | 289 |
| 23 0 | 302 | 302 | 301 | 302 | 303 | 302 | 303 | 303 | 303 | 301 | 296 | 286 | 274 | 262 | 258 | 262 | 269 | 275 | 286 | 293 | 298 | 297 | 306 | 300 | 291 |
| 24 | 295 | 302 | 303 | 305 | 305 | 304 | 302 | 301 | 300 | 299 | 299 | 289 | 273 | 258 | 245 | 248 | 255 | 277 | 279 | 275 | 299 | 310 | 296 | 302 | 288 |
| 25 | 309 | | | | | | | | | | | 274 | 263 | 245 | 235 | 237 | 246 | 259 | 281 | 297 | 301 | 296 | 297 | 302 | |
| | | | | | | | | | | | | | | | | _0. | | | | | | | | | |
| 26 Q | 302 | 302 | 299 | 300 | 300 | 299 | 297 | 296 | 296 | 294 | 288 | 279 | 266 | 254 | 244 | 237 | 243 | 260 | 280 | 295 | 300 | 302 | 304 | 302 | 285 |
| 27 | 302 | 301 | 302 | 303 | 304 | 302 | 299 | | | | | | 271 | 256 | 243 | 246 | 254 | 267 | 288 | 298 | 308 | 307 | 297 | 295 | |
| 28 Q | 304 | 302 | 302 | 303 | 301 | 301 | 300 | 299 | 297 | 295 | 290 | 276 | 261 | 245 | 237 | 240 | 254 | 271 | 287 | 306 | 313 | 308 | 300 | 300 | 287 |
| 29 | 300 | 300 | 301 | 300 | 300 | 297 | 297 | 299 | 298 | 296 | 290 | 278 | 268 | 259 | 245 | 236 | 243 | 256 | 273 | 279 | 281 | 299 | 308 | 317 | 284 |
| 30 D | 316 | 302 | 274 | 284 | 281 | 291 | 287 | 279 | 284 | 285 | 274 | | 268 | 246 | 234 | 236 | 238 | 267 | 286 | 308 | 313 | 293 | 289 | 306 | 280 |
| | | | | | | | | , | | _55 | | | _00 | | | _50 | | | _00 | | | | | | |
| 31 D | 307 | 311 | 303 | 300 | 301 | 303 | 300 | 297 | 298 | 296 | 288 | 279 | 269 | 252 | 251 | 246 | 259 | 266 | 286 | 294 | 298 | 304 | 308 | 301 | 288 |
| | 307 | | 505 | 200 | 301 | 505 | 500 | , | | | | , | _0, | | | | | _00 | _00 | | | 201 | 200 | 301 | |
| MEAN | | | | | | | | | | | | | | | | | | | | | | | | | |
| MEAN O | | | | | | | | | | | | | | | | 252 | | | | | | | | | |
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| LIVINGSTON ISLAND MAGNETIC OBSERVATORY DECLINATION EAST NOVEMBER 2004 D = 14 DEGREES PLUS TABULAR QUANTITIES (UNITS 0.1 MINUTES) HOUR(UT) 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 MEAN | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|-----|-----|-----|-------|-----|-----|-----|-----|-----|-----|-----|-----|------|
| | | 1 | 2 | 2 | 4 | _ | | | | | | | | | - | | | - | 10 | 10 | 20 | 21 | 22 | 22 | MEAN |
| DAY | U | 1 | 2 | 3 | 4 | 5 | 0 | , | • | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 10 | 1/ | 10 | 19 | 20 | 21 | 22 | 23 | MEAN |
| 1 | 406 | 407 | 418 | 417 | 414 | 410 | 402 | 396 | 384 | 376 | 369 | 378 | 378 | 389 | 418 | 433 | 446 | 451 | 452 | 446 | 441 | 433 | 426 | 411 | 413 |
| 2 0 | 394 | 400 | 408 | 410 | 407 | 404 | 402 | 395 | 389 | 384 | 372 | 363 | 367 | | 407 | 433 | 459 | 470 | 476 | 465 | 455 | 433 | 424 | 413 | 413 |
| 3 | 408 | 407 | 407 | 404 | 402 | 398 | 391 | 383 | 372 | 356 | 353 | 372 | 372 | 369 | 381 | 406 | 439 | | | | 433 | | | 413 | 413 |
| 4 | | | 407 | 404 | 402 | | | | 3/2 | | | | | 393 | 407 | 418 | 442 | 461 | 461 | 457 | 434 | 421 | 409 | 398 | |
| 5 Q | 389 | 409 | 412 | 410 | 405 | 405 | 396 | 388 | 375 | 367 | 363 | 366 | 372 | 380 | | | 426 | | | 437 | 427 | 417 | 416 | 415 | 402 |
| 3 Q | 309 | 403 | 712 | 410 | 403 | 403 | 330 | 300 | 373 | 307 | 303 | 300 | 312 | 300 | | | 420 | | | 437 | 72/ | 71, | 410 | 413 | 402 |
| 6 0 | 412 | 408 | 408 | 408 | 403 | 398 | 393 | | 374 | 372 | 371 | 371 | 374 | 377 | 392 | 420 | 447 | 457 | 457 | 444 | | | | 416 | |
| 7 D | 411 | 409 | 405 | 400 | 398 | 388 | 381 | 370 | 355 | 352 | 343 | 313 | | | | | 515 | 496 | 485 | 494 | | | | 454 | |
| 8 D | 430 | | | 289 | 122 | | 104 | 166 | | | | | | | | 514 | 506 | 494 | 495 | 484 | 447 | | 396 | 396 | |
| 9 D | 376 | 369 | 346 | 365 | | 373 | 341 | 421 | | 439 | 460 | 446 | 488 | 474 | 507 | 557 | 534 | 567 | 537 | 578 | 333 | 572 | 575 | 571 | 460 |
| 10 D | 536 | 506 | 393 | | 419 | 242 | 177 | | 400 | 629 | 682 | 704 | 670 | 598 | 595 | 571 | 567 | 551 | 520 | 493 | 481 | 426 | 451 | 442 | 492 |
| | | | | | | | | 0_, | | 0_0 | | . • - | | | | · · - | ••• | | 0_0 | | | | | | |
| 11 | 424 | 377 | 390 | 398 | 404 | 356 | 350 | 329 | 347 | 373 | 393 | 391 | 399 | 411 | 427 | 452 | 475 | 472 | 467 | 462 | 461 | 455 | 458 | 452 | 413 |
| 12 D | 439 | 406 | 355 | 358 | 355 | 390 | 388 | 356 | 359 | 412 | 427 | | | | 432 | | 485 | 504 | 495 | 507 | 508 | 483 | 458 | 449 | 429 |
| 13 | 440 | 420 | 421 | 420 | 415 | 401 | 399 | 396 | 374 | 370 | 378 | 389 | 386 | 397 | 414 | 433 | 458 | 470 | 467 | 460 | 454 | 443 | 437 | 431 | 420 |
| 14 | 416 | 405 | 382 | 396 | 395 | 400 | 397 | 400 | 392 | 392 | 391 | 390 | 395 | 407 | 420 | 430 | | | | | | 446 | 445 | 439 | |
| 15 Q | 430 | 425 | 419 | 414 | 414 | 410 | 403 | 387 | 378 | 375 | | | 377 | 384 | 401 | 419 | 442 | | | 467 | 460 | 450 | 443 | 434 | 417 |
| ~ ~ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | 426 | 422 | 416 | 409 | 403 | 396 | 382 | 392 | 403 | 404 | 383 | 405 | 402 | 401 | 417 | 435 | 443 | 462 | | | 465 | 460 | 440 | 430 | 420 |
| 17 | 424 | 422 | 418 | 410 | 409 | 408 | 405 | 414 | 395 | 385 | 383 | 396 | 398 | 409 | 426 | 438 | 448 | 469 | 480 | 475 | 463 | | 440 | | 424 |
| 18 Q | 423 | 423 | 419 | 418 | 414 | 407 | 402 | 389 | 381 | 379 | 381 | 387 | 396 | 405 | 415 | | | | | | | | | | |
| 19 | | | | | | 400 | 390 | 379 | 373 | 365 | | 369 | 378 | 392 | 409 | 423 | 441 | 460 | 461 | 454 | 440 | 431 | 428 | 422 | |
| 20 | 446 | 419 | 413 | 399 | 390 | 379 | 369 | 347 | 368 | 375 | 412 | 419 | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | 417 | 417 | 415 | 407 | 380 | 356 | 342 | 346 | 350 | 366 | 353 | 365 | 375 | 397 | 425 | 455 | 473 | 492 | 484 | 469 | 452 | 437 | 414 | 413 | 408 |
| 27 | 418 | 414 | 419 | 415 | 411 | 403 | 380 | 346 | 345 | 351 | 360 | 366 | 384 | 408 | 437 | 460 | 488 | 509 | 508 | 505 | 486 | 471 | 459 | 444 | 425 |
| 28 | 410 | 381 | 403 | 401 | 398 | 383 | 355 | 375 | 375 | 372 | 370 | 374 | 402 | 417 | 437 | 468 | 486 | 497 | 507 | 500 | 476 | 459 | 453 | 451 | 423 |
| 29 | 421 | 412 | 388 | 387 | 392 | 388 | 374 | 359 | 337 | 344 | 360 | 372 | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | 387 | 415 | 422 | 443 | 459 | 472 | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| MEAN | | 450 | 450 | 450 | 400 | 405 | | | | | | | | | 460 | | | | | | | | | | |
| MEAN Q | 410 | 413 | 413 | 412 | 409 | 405 | 399 | 389 | 379 | 375 | 372 | 372 | 377 | 385 | 402 | | | | | | 447 | | | 460 | |
| MEAN D | 439 | 415 | 354 | 364 | 325 | 334 | 280 | 326 | | 443 | | | | | | | 522 | 523 | 507 | 511 | 447 | | | 462 | |

| | VINGSTON | N ISLAND | MAGN | ETIC | OBSER | VATOR | ĽΥ | | c | | III - D.T | ma | | ZONTAL | | | 10 M\ | | | | | | | | | |
|--------|----------|----------|------|------|-------|-------|----|---|-------|---|-----------|--------|-------------|--------------|----|-------|--------------|-----|----|----|----|----|----|----|----|------|
| | | 2004 | 1 | • | _ | | 5 | | H = 2 | 8 | nr Pi | 105 TA | BULAR 11 | QUANTI 12 | 13 | (UNII | :S nT) 15 | 1.0 | 17 | 18 | 10 | 00 | 21 | 22 | 23 | MEAN |
| DA: | UR (UT) | U | 1 | 2 | 3 | 4 | 5 | 6 | , | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 1/ | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
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| 12 | D | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 14 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | Q | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 16 | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 18 | Q | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | NGSTON | | MAGN | ETIC | OBSER | VATOR | RΥ | | | | | | | ICAL IN | | | | | | | | | | | | |
|--------|---------|---|------|------|-------|-------|----|---|---|---|---|----|----|---------|----|----|----|-----|-----|----|----|-----|-----|----|----|------|
| | MBER 20 | | | • | _ | | - | | | | | | | QUANTI | | - | | 1.0 | 4.7 | 10 | 10 | 0.0 | 0.1 | 00 | 00 | |
| HOUR | (UT) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| MEAN | 1 | | | | | | | | | | | | | | | | | | | | | | | | | |

| | VINGSTON I | | MAGN | ETIC | OBSER | VATOR | ĽΥ | | r = 3 | 5500 | חיים די | .TIC TIZ | | L INTEN QUANTI | | /IINITT | ር ኮሞነ | | | | | | | | | |
|----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------------|------------|---------|---------|------------|---------|---------|------------|------------|-----|------------|------------|-----------|
| | UR (UT) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DA: | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | 302 | 305 | 298 | 296 | 296 | 297 | 294 | 296 | 292 | 288 | 284 | 275 | 265 | 251 | _ | 253 | 261 | 273 | 280 | 287 | 293 | 301 | 303 | 305 | 285 |
| | Q | 306 | 295 | 295 | 296 | 294 | 292 | 292 | 292 | 293 | 289 | 293 | 290 | 282 | | 258 | 258 | 260 | 269 | 287 | 294 | 296 | 301 | 304 | 306 | 288 |
| 3 | | 302 | 303 | 303 | 302 | 302 | 300 | 297 | 296 | 298 | 297 | 289 | 291 | 286 | 273 265 | 255 | 247 | | | | | | 200 | 21.6 | 201 | |
| 4 | | 294 | 299 | | 205 | 294 | 295 | 291 | 291 | 291 | 291 | 286 | 277 | 267 | 265 257 | 257 | 254 | 260 259 | 257 | 270 | 281 286 | 298 290 | 309 | 316 296 | 321 298 | 285 |
| 5 | Q | 294 | 299 | 299 | 295 | 294 | 295 | 291 | 291 | 291 | 291 | 200 | 211 | 207 | 257 | | | 259 | | | 200 | 290 | 296 | 296 | 296 | 265 |
| 6 | Q | 298 | 301 | 301 | 301 | 299 | 297 | 296 | | 293 | 289 | 281 | 271 | 263 | 255 | 249 | 245 | 250 | 266 | 286 | 293 | | | | 300 | |
| 7 | D | 298 | 299 | 296 | 315 | 311 | 308 | 306 | 304 | 299 | 292 | 290 | 298 | | | | | 253 | 233 | 289 | 337 | | | | 387 | |
| 8 | D | 404 | | | -372 | -516 | | -101 | -19 | | | | | | | | 293 | 296 | 309 | 325 | 341 | 366 | | 355 | 327 | |
| 9 | D | 306 | 280 | 264 | 251 | | 226 | 243 | 235 | | 276 | 271 | 227 | 205 | 185 | 194 | 217 | 259 | 283 | 311 | 383 | 827 | 353 | 287 | 300 | 288 |
| 10 | D | 315 | 325 | 277 | | 114 | 120 | 11 | -228 | -22 | -75 | -61 | 100 | 227 | 252 | 275 | 291 | 297 | 303 | 319 | 318 | 346 | 348 | 328 | 313 | 196 |
| 11 | | 316 | 212 | 294 | 292 | 286 | 275 | 258 | 275 | 278 | 285 | 267 | 263 | 260 | 259 | 251 | 251 | 257 | 276 | 284 | 284 | 294 | 303 | 322 | 321 | 282 |
| | D | 318 | 311 | | 270 | 285 | 282 | 296 | 304 | 291 | 255 | 254 | | | | 251 | | 249 | 258 | 277 | 292 | 294 | 289 | 299 | 302 | 281 |
| 13 | | 305 | 302 | 299 | 293 | 297 | 297 | 291 | 287 | 286 | 283 | 274 | 265 | 263 | 263 | 255 | 244 | 242 | 254 | 273 | 287 | 303 | 294 | 297 | 310 | 282 |
| 14 | | 316 | 298 | 289 | 288 | 291 | 292 | 295 | 287 | 286 | 285 | 279 | 274 | 267 | 260 | 252 | 249 | | | | | | 297 | 295 | 299 | |
| | Q | 301 | 299 | 298 | 300 | 300 | 300 | 304 | 300 | 296 | 293 | 286 | 280 | 270 | 260 | 254 | 251 | | | | 287 | 297 | 304 | 303 | 301 | 287 |
| | ~ | | | | | | | | | | | | | | | | _ | | | | | | | | | |
| 16 | | 302 | 302 | 304 | 306 | 305 | 304 | 304 | 300 | 295 | 286 | 285 | 277 | 272 | 264 | 257 | 253 | 261 | 268 | | | 296 | 308 | 292 | 305 | 288 |
| 17 | | 306 | 304 | 305 | 304 | 301 | 300 | 296 | 282 | 282 | 283 | 279 | 277 | 273 | 268 | 262 | 257 | 256 | 262 | 277 | 290 | 296 | | 303 | | 285 |
| 18 | Q | 300 | 301 | 301 | 302 | 301 | 301 | 301 | 301 | 298 | 294 | 286 | 277 | 267 | 259 | 254 | | | | | | | | | | |
| 19 | | | | | | | 303 | 298 | 299 | 295 | 291 | | 276 | 267 | 262 | 258 | 258 | 264 | 277 | 284 | 290 | 289 | 298 | 302 | 319 | |
| 20 | | 294 | 300 | 308 | 313 | 311 | 288 | 293 | 287 | 285 | 280 | 272 | 266 | | | | | | | | | | | | | |
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| 25 | | | | | | | | | | | | | | | | | | | | 287 | 303 | 304 | 311 | 318 | 320 | |
| | | | | | 000 | 225 | | | 001 | 0.00 | 0.00 | | | 0.50 | | | 0.40 | 050 | 0.00 | | | | | | | 0.70 |
| 26 | | 302 | 300 | 299 | 297 | 296 | 287 | 285 | 281 | 276 | 270 | 266 | 257 | 253 | 245 | 244 | 248 | 259 | 268 | 268 | 290 | 300 | 302 | 303 | 300 | 279 |
| 27 | | 295 | 305 | 298 | 298 | 299 | 300 | 294 | 276 | 279 | 271 | 263 | 254 | 251 | | 243 | 254 | 254 | 272 | 280 | 291 | 292 | 303 | 309 | 306 | 281 |
| 28 29 | | 316 315 | 311 329 | 307 326 | 302 312 | 297 310 | 293 311 | 283 306 | 268 300 | 269 284 | 267 271 | 265 264 | 260 260 | 253 | 247 | 249 | 254 | 263 | 269 | 278 | 281 | 289 | 303 | 315 | 309 | 281 |
| 30 | | 313 | 329 | 320 | 312 | 310 | 311 | 306 | 300 | 204 | 2/1 | 264 | 260 | | 254 | 254 | 251 | 257 | 262 | | | | | | | |
| 30 | | | | | | | | | | | | | | 256 | 234 | 234 | 231 | 231 | 202 | | | | | | - | - |
| ME | AN | | | | | | | | | | | | | | | | | | | | | | | | | |
| ME | AN Q | 300 | 299 | 299 | 299 | 298 | 297 | 297 | 296 | 294 | 291 | 286 | 279 | 270 | 259 | 253 | | | | | | | | | | |
| ME | AN D | 328 | 272 | 235 | 131 | 81 | 129 | 155 | 119 | | 159 | | | | | | | 271 | 277 | 304 | 334 | 445 | | | 326 | |

| | | TON ISLAND | MAGN | NETIC | OBSER | VATOR | Y | | _ 1 | 4 556 | | DT 0 | DECLIN | | | . / | | | | | | | | | | |
|-----|--------|------------|------|-------|-------|-------|------|-----|-----|-------|-----|------|---------|-----|-----|-----|-----|-----|-----|------|------|------|-----|-----|------|------|
| | | R 2004 | | • | _ | | - | | | | | | TABULAR | ~ | | • | | | • | 10 | 10 | 00 | 01 | 00 | 00 | |
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| 3 | ~ | | | 412 | 408 | 402 | 391 | 378 | 373 | 366 | 363 | 359 | 365 | 384 | 406 | 424 | 441 | 450 | 460 | 458 | 456 | 446 | | 436 | 433 | 411 |
| 4 | ~ | 429 | 422 | 415 | 409 | 404 | 399 | 390 | 375 | 364 | 364 | 366 | 373 | 381 | 402 | 418 | 438 | 454 | 462 | 469 | 466 | 451 | 435 | 429 | 429 | 414 |
| 5 | | 426 | 422 | 417 | 412 | 405 | 395 | 376 | 357 | 301 | 302 | 314 | 334 | 352 | 375 | 397 | 413 | 429 | 438 | 447 | 441 | 432 | 425 | 418 | 419 | 394 |
| _ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | _ | 422 | 418 | 414 | 407 | 399 | 356 | 329 | 347 | 368 | 370 | 383 | 406 | 421 | | 436 | 466 | 483 | 515 | 546 | 527 | 493 | 473 | 442 | 407 | 427 |
| 7 | | 408 | 413 | 410 | 404 | 405 | 413 | 393 | 379 | 372 | 369 | 374 | 375 | 383 | 408 | 417 | 428 | 441 | 464 | 481 | 468 | 448 | 439 | 433 | 423 | 414 |
| 8 | | 418 | 414 | 390 | 376 | 392 | 382 | 392 | 393 | 370 | 364 | 366 | 368 | 389 | 398 | 427 | 452 | 471 | 476 | 469 | 451 | 442 | 435 | 424 | 419 | 412 |
| 9 | | 406 | 390 | 404 | 403 | 401 | 394 | 387 | 378 | 372 | 353 | 346 | 363 | 370 | 399 | 423 | 434 | 454 | 475 | 473 | 452 | 448 | 443 | 435 | 434 | 410 |
| 10 | | 420 | 415 | 418 | 420 | 408 | 389 | 382 | 369 | 355 | 344 | 355 | 375 | 395 | 405 | 429 | 454 | 488 | 512 | 511 | 498 | 472 | 450 | 435 | 427 | 422 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | | 422 | 417 | 412 | 409 | 404 | 392 | 378 | 390 | 380 | 359 | 360 | 367 | 378 | 392 | 434 | 465 | 464 | 477 | 504 | 529 | 527 | 493 | 449 | 438 | 427 |
| 12 | D | 441 | 436 | 366 | 388 | 396 | 409 | 412 | 371 | 349 | 360 | 388 | 402 | 400 | 418 | 443 | 487 | 505 | 466 | 472 | 481 | 466 | 451 | 444 | 429 | 424 |
| 13 | | 419 | 411 | 385 | 358 | 357 | 373 | 384 | 388 | 360 | 351 | 360 | 379 | 393 | 401 | 410 | 422 | 444 | 463 | 463 | 453 | 437 | 429 | 427 | 426 | 404 |
| 14 | | 421 | 417 | 414 | 407 | 401 | 399 | 386 | 355 | 353 | 345 | 363 | 391 | 396 | 427 | 437 | 452 | 476 | 479 | 471 | 469 | 453 | 443 | 439 | 435 | 418 |
| 15 | i | 431 | 424 | 423 | 418 | 416 | 405 | 391 | 357 | | | | 387 | 393 | 402 | 425 | 451 | 472 | 476 | 468 | 464 | 459 | 450 | 451 | 449 | 425 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | | 446 | 433 | 427 | 416 | 404 | 384 | 384 | 370 | 359 | 360 | 372 | 382 | 391 | 423 | 447 | 458 | 466 | 477 | 467 | 463 | 481 | 473 | 453 | 444 | 424 |
| 17 | | 411 | 409 | 400 | 401 | 376 | 375 | 354 | 370 | 376 | 364 | 360 | 378 | 392 | 397 | 406 | 439 | 465 | 474 | 475 | 475 | 457 | 440 | 425 | 424 | 410 |
| 18 | | 393 | 389 | 380 | 373 | 393 | 394 | 389 | 384 | 378 | 368 | 386 | 394 | 406 | 418 | 440 | 440 | 443 | 451 | 462 | 451 | 442 | 439 | 442 | 439 | 412 |
| 19 | Q | 429 | 422 | 416 | 409 | 404 | 399 | 390 | 378 | 356 | 352 | 359 | 371 | 383 | 403 | 417 | 429 | 442 | 451 | 453 | 441 | 434 | 434 | 435 | 437 | 410 |
| 20 | | 435 | 423 | 399 | 406 | 402 | 397 | 388 | 378 | 365 | 362 | 358 | 363 | 385 | 410 | 430 | 438 | 444 | 452 | 452 | 449 | 437 | 422 | 417 | 418 | 410 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | | 419 | 416 | 412 | 410 | 406 | 397 | 380 | 350 | 329 | 324 | 362 | 407 | 400 | 400 | 422 | | | | | | | | | | |
| 22 | D | | | | | | | | | | | | | | | | | | | 483 | 476 | 467 | 460 | 454 | 443 | |
| 23 | | 434 | 435 | 428 | 418 | 408 | 394 | 383 | 379 | 374 | 371 | 385 | 386 | 391 | 409 | 428 | 456 | 463 | 468 | 470 | 458 | 447 | 437 | 430 | 431 | 420 |
| 24 | | 436 | 433 | 429 | 423 | 416 | 409 | 400 | 386 | 372 | 365 | 374 | 383 | 392 | 405 | 428 | 457 | 483 | 481 | 480 | 465 | 448 | 442 | 437 | 435 | 424 |
| 25 | 0 | 434 | 408 | 415 | 409 | 404 | 368 | 333 | 349 | 329 | 336 | 353 | 352 | 380 | 410 | 428 | 447 | 475 | 480 | 472 | 462 | 445 | 437 | 433 | 430 | 408 |
| | ~ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | ; | 432 | 418 | 401 | 409 | 393 | 386 | 378 | 374 | 375 | 363 | 367 | 377 | 386 | 408 | 427 | 443 | 464 | 471 | 461 | 456 | 447 | 430 | 423 | 424 | 413 |
| 27 | | 417 | 424 | 425 | 414 | 410 | 410 | 376 | 360 | 355 | 348 | 355 | 367 | 382 | 397 | 417 | 428 | 450 | 459 | 452 | 456 | 464 | 458 | 452 | 436 | 413 |
| | D | 425 | 411 | 406 | 401 | 406 | 402 | 396 | 391 | 387 | 388 | 397 | 402 | 408 | 414 | 434 | 466 | 482 | 500 | 517 | 493 | 502 | 458 | 464 | 426 | 432 |
| 29 | _ | 404 | 409 | 419 | 416 | 397 | 401 | 390 | 375 | 372 | 379 | 419 | 432 | 436 | 429 | 460 | 466 | 493 | 502 | 496 | 486 | 466 | 446 | 428 | 417 | 431 |
| | D | 430 | 430 | 435 | 424 | 402 | 400 | 363 | 321 | 320 | 320 | 325 | | | 415 | 431 | 448 | | 483 | 463 | 456 | 435 | 418 | 408 | 420 | 407 |
| 50 | | -200 | -20 | -233 | 724 | 302 | 100 | 303 | 221 | 323 | 320 | 323 | | | 113 | 131 | 440 | | 203 | -103 | -200 | -233 | 410 | 200 | 120 | 207 |
| 31 | | 406 | 421 | 427 | 423 | 413 | 402 | 384 | 377 | 372 | 366 | 361 | 369 | 393 | 403 | 416 | 444 | 467 | 475 | 481 | 459 | 441 | 426 | 419 | 419 | 415 |
| 31 | | -100 | 421 | 72/ | 723 | 413 | -102 | 304 | 5,7 | 3,2 | 500 | 301 | 309 | 293 | 403 | 410 | 223 | 407 | 313 | 401 | 209 | 331 | 420 | 719 | -213 | 413 |
| ME | AN | | | 411 | 406 | 401 | 393 | 381 | 371 | | | | | | 407 | 427 | | | | 476 | 468 | 457 | | 435 | 429 | |
| | AN O | | | 411 | | 401 | | 301 | | | | | | | | | | | | 470 | | | | | | |
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| LIVINGSTON I | | MAGN | ETIC | OBSER | VATOR | Y | | | | | | | ZONTAL | | | | | | | | | | | | |
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| DECEMBER 200 | | | | | | | | | | | | | QUANTI | | | | | | | | | | | | |
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| 12 D | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 19 Q | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 22 D | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 24 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 Q | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 26 | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 28 D | | | | | | | | | | | | | | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 D | | | | | | | | | | | | | | | | | | | | | | | | | |
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| MEAN | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | STON IS | LAND | MAGN | ETIC | OBSER | VATOR | Y | | | | | | | ICAL IN | | | | | | | | | | | | |
|----|--------|---------|------|------|------|-------|-------|---|---|---|---|---|----|----|---------|----|----|----|----|----|----|----|----|----|----|----|------|
| | | ER 2004 | | _ | | _ | _ | _ | | | | | | | QUANTI | | • | | | | | | | | | | |
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| DA | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 12 | D | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 22 | D | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 25 | Q | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 26 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 28 | D | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 30 | D | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | VINGSTON | | MAGN | ETIC | OBSER | VATOR | ĽΥ | | F = 3 | 35500 | nT PL | US TA | | L INTEN OUANTI | | (UNIT | 'S nT) | | | | | | | | | |
|-----|----------|-----|------|------|-------|-------|----------|-----|-------|-------|-------|-------|-----|-------------------|-----|-------|--------|------|-----|------|-----|-----|-----|-----|-----|------|
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| 2 | Q | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | 299 | 297 | 297 | 298 | 295 | 294 | 294 | 291 | 284 | 274 | 267 | 263 | 258 | 257 | 253 | 259 | 272 | 283 | 293 | 296 | | 293 | 296 | 283 |
| 4 | õ | 296 | 293 | 295 | 296 | 296 | 298 | 300 | 300 | 294 | 288 | 283 | 273 | 264 | 254 | 250 | 245 | 246 | 258 | 272 | 283 | 291 | 295 | 296 | 295 | 282 |
| 5 | - | 297 | 297 | 299 | 297 | 298 | 307 | 310 | 316 | 342 | 317 | 300 | 286 | 277 | 270 | 265 | 258 | 249 | 255 | 277 | 280 | 293 | 308 | 296 | 297 | 291 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | D | 306 | 293 | 296 | 298 | 296 | 290 | 270 | 269 | 272 | 264 | 265 | 247 | 243 | 239 | 243 | 241 | 240 | 256 | 262 | 281 | 304 | 308 | 319 | 310 | 275 |
| 7 | | 304 | 304 | 292 | 292 | 292 | 288 | 282 | 278 | 275 | 278 | 272 | 267 | 263 | 259 | 263 | 263 | 251 | 269 | 275 | 283 | 296 | 309 | 296 | 296 | 281 |
| 8 | | 296 | 300 | 302 | 298 | 296 | 290 | 290 | 287 | 286 | 281 | 268 | 261 | 254 | 247 | 247 | 257 | 263 | 269 | 278 | 295 | 307 | 302 | 287 | 294 | 282 |
| 9 | | 305 | 305 | 296 | 294 | 293 | 292 | 292 | 287 | 282 | 278 | 271 | 268 | 260 | 252 | 251 | 256 | 259 | 267 | 273 | 287 | 295 | 289 | 301 | 299 | 281 |
| 10 | | 301 | 296 | 293 | 298 | 297 | 300 | 298 | 286 | 277 | 271 | 265 | 265 | 261 | 258 | 255 | 267 | 273 | 268 | 280 | 288 | 288 | 294 | 280 | 295 | 281 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | | 296 | 301 | 302 | 299 | 294 | 288 | 283 | 280 | 282 | 280 | 269 | 261 | 257 | 248 | 241 | 258 | 270 | 290 | 286 | 296 | 305 | 318 | 307 | 308 | 284 |
| 12 | D | 305 | 306 | 313 | 287 | 292 | 284 | 281 | 277 | 280 | 264 | 250 | 258 | 259 | 244 | 239 | 238 | 241 | 276 | 277 | 279 | 281 | 290 | 306 | 312 | 277 |
| 13 | | 317 | 282 | 282 | 289 | 279 | 277 | 278 | 276 | 279 | 276 | 268 | 252 | 246 | 247 | 251 | 253 | 260 | 270 | 284 | 292 | 293 | 291 | 291 | 291 | 276 |
| 14 | | 294 | 298 | 295 | 295 | 301 | 299 | 292 | 277 | 278 | 276 | 260 | 262 | 256 | 254 | 250 | 246 | 246 | 258 | 274 | 290 | 285 | 280 | 286 | 295 | 277 |
| 15 | | 300 | 294 | 301 | 302 | 304 | 302 | 296 | 289 | | | | 268 | 254 | 239 | 233 | 239 | 254 | 269 | 289 | 305 | 302 | 296 | 292 | 288 | 282 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | | 300 | 312 | 318 | 317 | 310 | 296 | 297 | 299 | 292 | | 279 | 271 | 259 | 247 | 245 | 254 | 257 | 253 | 271 | 295 | 306 | 280 | 297 | 311 | 285 |
| 17 | | 314 | 318 | 314 | 314 | 295 | 293 | 299 | 289 | 278 | 276 | 272 | 259 | 252 | 250 | 250 | 249 | 242 | 258 | 267 | 280 | 284 | 296 | 305 | 302 | 281 |
| 18 | | 304 | 305 | 300 | 289 | 295 | 302 | 300 | 296 | 283 | 279 | 270 | 264 | 259 | 255 | 247 | 261 | 263 | 269 | 268 | 272 | 284 | 289 | 292 | 293 | 281 |
| 19 | Q | 295 | 298 | 298 | 295 | 294 | 295 | 293 | 293 | 289 | 279 | 269 | 264 | 265 | 265 | 265 | 260 | 255 | 261 | 275 | 283 | 289 | 289 | 291 | 297 | 281 |
| 20 | | 298 | 298 | 300 | 294 | 295 | 298 | 296 | 289 | 283 | 277 | 269 | 263 | 260 | 259 | 256 | 257 | 255 | 256 | 265 | 281 | 294 | 292 | 298 | 296 | 280 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | | 294 | 297 | 288 | 296 | 303 | 310 | 316 | 326 | 296 | 271 | 247 | 259 | 254 | 254 | 254 | | | | | | | | | | |
| 22 | D | | | | | | | | | | | | | | | | | | | 261 | 274 | 287 | 294 | 300 | 292 | |
| 23 | | 288 | 291 | 294 | 291 | 291 | 287 | 284 | 284 | 277 | 267 | 261 | 256 | 252 | 252 | 252 | 244 | 263 | 278 | 286 | 295 | 300 | 292 | 293 | 287 | 278 |
| 24 | | 286 | 285 | 286 | 286 | 287 | 288 | 291 | 289 | 285 | 275 | 267 | 260 | 255 | 257 | 262 | 261 | 262 | 272 | 279 | 287 | 287 | 294 | 293 | 314 | 280 |
| 25 | Q | 305 | 291 | 299 | 306 | 304 | 306 | 288 | 291 | 274 | 274 | 261 | 257 | 255 | 248 | 245 | 242 | 252 | 267 | 282 | 281 | 292 | 294 | 294 | 293 | 279 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | | 293 | 301 | 298 | 295 | 295 | 297 | 299 | 291 | | 274 | 263 | 256 | 258 | 261 | 263 | 262 | 259 | 262 | 287 | 297 | 293 | 284 | 285 | 291 | 281 |
| 27 | _ | 288 | 285 | 290 | 300 | 303 | 301 | 301 | 304 | 294 | | 276 | 267 | 250 | 246 | 250 | 264 | 274 | 277 | 288 | 302 | 291 | 291 | 287 | 294 | 283 |
| 28 | D | 298 | 294 | 289 | 285 | 284 | 288 | 291 | 286 | 284 | 274 | 264 | 262 | 261 | 261 | 266 | 263 | 275 | 280 | 292 | 290 | 307 | 302 | 307 | 308 | 284 |
| 29 | _ | 298 | 287 | 286 | 289 | 285 | 289 | 289 | 290 | 282 | 268 | 262 | 252 | 263 | 265 | 257 | 264 | 267 | 263 | 274 | 282 | 286 | 291 | 286 | 299 | 278 |
| 30 | D | 300 | 295 | 300 | 303 | 299 | 304 | 311 | 326 | 293 | 275 | 265 | | | 236 | 242 | 247 | | 264 | 284 | 283 | 287 | 297 | 294 | 295 | 282 |
| 21 | | 007 | 000 | 007 | 200 | 007 | 000 | 000 | 000 | 070 | 076 | 070 | 056 | 0.47 | 051 | 040 | 051 | 0.00 | 260 | 0.00 | 074 | 070 | 004 | 200 | 200 | 075 |
| 31 | | 297 | 288 | 28/ | 289 | 287 | 283 | 282 | 282 | 279 | 276 | 270 | 256 | 247 | 251 | 249 | 251 | 262 | 260 | 269 | 2/4 | 278 | 294 | 296 | 292 | 275 |
| MEZ | ΔN | | | 297 | 296 | 295 | 295 | 293 | 291 | | | | | | 253 | 252 | | | | 277 | 287 | 293 | | 295 | 298 | |
| | AN O | | | | 290 | | | | | | | | | | | | | | | | 201 | | | | 230 | |
| | AN D | | | | | | | | | | | | | | | | | | 265 | 275 | 281 | 293 | 298 | 305 | 303 | |
| PIE | מ אב | | | | | | - | | | | | | | | | | | | 203 | 213 | 201 | 233 | 230 | 303 | 303 | |

| | DECLINATION EAST ANUARY 2005 D = 14 DEGREES PLUS TABULAR QUANTITIES (UNITS 0.1 MINUTES) OUR (UT) 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 MEAN | | | | | | | | | | | | | | | | | | | | | | | | | |
|------|---|-----|-----|-----|-----|-----|-----|------------|-----|-----|-----|-----|------|-----|-----|-----|------------|-----|------------|-----|-----|-----|-----|-----|-----|------|
| | | | - | 2 | 2 | | _ | | | | | | | - | | • | | | | 10 | 10 | 20 | 21 | 22 | 22 | MEAN |
| DAY | | U | 1 | 2 | 3 | 4 | 5 | ь | , | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 10 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DA 1 | | 414 | 419 | 425 | 421 | 411 | 381 | 240 | 348 | 348 | 348 | 346 | 343 | 367 | 413 | 421 | 432 | 448 | 482 | 523 | 543 | 490 | 453 | 436 | 444 | 417 |
| _ | D | 414 | 414 | 359 | 373 | 377 | 368 | 348 378 | 367 | 399 | 386 | 373 | 364 | 386 | 413 | 421 | 432 479 | 446 | 462 494 | 464 | 458 | 463 | 484 | 451 | 444 | 417 |
| 3 | ם | 372 | 426 | 436 | 429 | 384 | 365 | 378 | 354 | 350 | 364 | 384 | 387 | | 467 | 496 | 481 | 506 | 521 | 493 | 468 | 449 | 433 | 435 | 437 | 419 |
| 4 | | 432 | 410 | 412 | 400 | 416 | 403 | 385 | 375 | 369 | 349 | 359 | 366 | | 413 | 428 | 465 | 471 | 472 | 474 | 436 | 425 | 417 | 400 | 395 | 410 |
| 5 | | 376 | | 408 | 404 | | 386 | 377 | 372 | 383 | 372 | 360 | 394 | | 413 | | | 477 | | 464 | 455 | | 437 | 440 | 424 | 416 |
| 3 | | 376 | 394 | 400 | 404 | 367 | 300 | 311 | 312 | 363 | 312 | 360 | 334 | 410 | 410 | 444 | 4/2 | 4// | 4/1 | 404 | 455 | 440 | 437 | 440 | 424 | 410 |
| 6 | 0 | 423 | 424 | 421 | 418 | 413 | 406 | 397 | 385 | 371 | 366 | 366 | 380 | 394 | 418 | 434 | 452 | 471 | 472 | 460 | 456 | 440 | 440 | 434 | 431 | 420 |
| 7 | Q | 429 | 427 | 425 | 422 | 419 | 413 | 404 | 390 | 372 | 359 | 343 | 360 | 378 | 398 | 418 | 495 | 532 | 506 | 491 | 500 | 482 | 484 | 483 | 143 | 420 |
| 8 | | 273 | 349 | 344 | | 318 | 388 | 407 | 401 | 367 | 333 | 340 | 363 | 383 | 413 | | 476 | 502 | 505 | 479 | 457 | | 427 | 421 | 425 | 398 |
| | 0 | 429 | 432 | _ | | 419 | 412 | 403 | 392 | 377 | 369 | 361 | 377 | | 422 | 450 | | 474 | 459 | 433 | 412 | 407 | 406 | 413 | 420 | 416 |
| 10 | 2 | 424 | | 417 | 414 | | 404 | 396 | 390 | 376 | 371 | 366 | 368 | 382 | 401 | 429 | 461 | 485 | 487 | 467 | | 434 | 426 | 403 | 409 | 416 |
| 10 | | 727 | 727 | 41, | 717 | 400 | 404 | 330 | 390 | 370 | 3,1 | 300 | 300 | 302 | 401 | 723 | 401 | 403 | 407 | 407 | 443 | 434 | 420 | 403 | 403 | 410 |
| 11 | | 415 | 421 | 420 | 417 | 410 | 422 | 376 | 371 | 385 | 364 | 353 | 354 | 359 | 387 | 425 | 462 | 489 | 484 | 466 | 449 | 443 | 437 | 433 | 445 | 416 |
| 12 | | 435 | 437 | 426 | 320 | 360 | 376 | 388 | 372 | 342 | 356 | 375 | 407 | 403 | 437 | 438 | 476 | 492 | 497 | 507 | 476 | 460 | 428 | 407 | 407 | 418 |
| 13 | | 416 | _ | 421 | 400 | 400 | 400 | 379 | 378 | 367 | 362 | 358 | 359 | 377 | 411 | 452 | 489 | 518 | 520 | 482 | 475 | 431 | | 401 | 412 | 419 |
| 14 | | 428 | | 431 | 433 | 425 | 409 | 385 | 373 | 368 | 358 | 358 | 371 | 385 | 403 | 425 | 457 | 484 | 495 | 483 | | | 449 | 439 | 440 | 423 |
| 15 | | 425 | 418 | _ | 403 | 412 | 391 | 397 | 365 | 373 | 388 | 394 | 395 | 405 | 415 | 436 | 458 | 475 | 483 | 472 | 462 | | 422 | 414 | 408 | 420 |
| -5 | | 423 | 410 | 32, | 403 | | 331 | 337 | 303 | 373 | 300 | 334 | 333 | 405 | 413 | 450 | 430 | 1/3 | 103 | 7/2 | 102 | 130 | 322 | | 400 | 420 |
| 16 | | 413 | 416 | 407 | 404 | 405 | 408 | 394 | 383 | 373 | 366 | 366 | 380 | 396 | 394 | 418 | 444 | 473 | 482 | 479 | 473 | 460 | 448 | 452 | 441 | 420 |
| 17 | D | 400 | 374 | 383 | 385 | 384 | 405 | 391 | 387 | 353 | 328 | 345 | 345 | 419 | 414 | 383 | 407 | 460 | 561 | 527 | 525 | 494 | 480 | 456 | 454 | 419 |
| 18 | | 427 | 418 | 357 | 391 | 342 | 404 | 420 | 425 | 394 | 434 | 449 | 401 | | 459 | 505 | 543 | 503 | 500 | 491 | 501 | 511 | 500 | | 446 | 445 |
| 19 | | 448 | 346 | 267 | 274 | 280 | 254 | 270 | 316 | 402 | 476 | 496 | 505 | 548 | 484 | 491 | 504 | 528 | 524 | 491 | 476 | 452 | 436 | 414 | 422 | 421 |
| 20 | _ | 437 | 444 | 443 | 441 | 438 | 431 | 420 | 390 | 380 | | 373 | 374 | 411 | 430 | 441 | 479 | 506 | 505 | 500 | 476 | 463 | 459 | 430 | 432 | 437 |
| | | 10, | | | | 100 | | 120 | 550 | 500 | 301 | 3.3 | 57.1 | | 150 | | 1,7 | 500 | 505 | 500 | 1,0 | 100 | 100 | 130 | | 15. |
| 21 | D | 426 | 415 | 425 | 428 | 429 | 424 | 401 | 387 | 370 | 379 | 380 | 385 | 402 | 417 | 426 | 455 | 472 | 491 | 522 | 577 | 612 | 721 | 651 | 599 | 466 |
| 22 | _ | 562 | _ | 440 | 364 | 455 | 445 | 400 | 423 | 416 | 412 | 409 | 418 | 422 | 434 | 438 | 475 | 496 | 498 | 487 | 491 | 474 | 446 | 436 | 431 | 448 |
| 23 | | 439 | 417 | 413 | 411 | 412 | 413 | 413 | 412 | 393 | 396 | 388 | 381 | 387 | 398 | 423 | 444 | 469 | 470 | 474 | 457 | 448 | 419 | 393 | 418 | 420 |
| 24 | | 428 | | 415 | 421 | | 421 | 413 | 407 | 401 | 394 | 373 | 375 | 392 | 409 | 434 | 458 | 482 | 484 | 473 | 464 | 458 | | 427 | 421 | 427 |
| 25 | 0 | 422 | 420 | 415 | 417 | 417 | 411 | 407 | 400 | 384 | 379 | 366 | 365 | 373 | 398 | 431 | | 460 | 459 | 451 | 433 | | 418 | 416 | 420 | 414 |
| | - | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | 0 | 423 | 421 | 420 | 416 | 416 | 412 | 407 | 396 | 387 | 375 | 371 | 374 | 388 | 400 | 414 | 433 | 449 | 459 | 446 | 436 | 427 | 414 | 409 | 410 | 413 |
| 27 | _ | 411 | 414 | 411 | 408 | 404 | 402 | 401 | 395 | 385 | 375 | 360 | 353 | 359 | 376 | 399 | 423 | 443 | 448 | 432 | 419 | 408 | 403 | 409 | 422 | 403 |
| 28 | ~ | 419 | 410 | 408 | 404 | 389 | 379 | 381 | 378 | 367 | 354 | 340 | 339 | 357 | | 420 | 444 | 456 | 455 | 458 | 465 | 465 | 450 | 440 | 435 | 409 |
| 29 | | 426 | 428 | 421 | 416 | 408 | 392 | 376 | 355 | 348 | 316 | 319 | 345 | 353 | 375 | 399 | 440 | 447 | 473 | 492 | 506 | 459 | 445 | 446 | 404 | 408 |
| 30 | | 421 | 414 | 404 | 394 | 360 | 383 | 391 | 396 | 371 | 351 | 362 | 369 | 370 | 404 | 431 | 447 | 464 | 472 | 468 | 436 | 434 | 435 | 431 | | 410 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 31 | | | | 383 | | | | | | | | | | | | | | | | | | | | | 416 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ME.A | .N | 421 | 416 | 407 | 398 | 397 | 397 | 389 | 383 | 376 | 372 | 371 | 377 | 394 | 413 | 434 | 463 | 481 | 488 | 478 | 470 | 456 | 450 | 435 | 422 | 420 |
| ME.A | N Q | 422 | 422 | 419 | 416 | 414 | 409 | 403 | 394 | 381 | 373 | 365 | 370 | 382 | 403 | 425 | 448 | 459 | 459 | 445 | 431 | 421 | 416 | 416 | 421 | 413 |
| ME.A | N D | 426 | 393 | 359 | 370 | 362 | 371 | 372 | 376 | 384 | 400 | 409 | 400 | 432 | 435 | 448 | 478 | 492 | 514 | 499 | 508 | 506 | 524 | 484 | 474 | 434 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |

| LIVINGSTON I | SLAND | MAGN | ETIC | OBSER | VATOR | Y | | - 00 | | .m. D | · | | IZONTAL QUANTIT | | | m\ | | | | | | | | | |
|--------------|-------|------|------|-------|-------|---|--------|------|-------------|-------|-------|-------------|--------------------|-------|-------|----|----|----|----|----|----|----|----|----|------|
| HOUR (UT) | 0 | 1 | 2 | 3 | 4 | 5 | н 6 | = 20 | 1000 n 8 | T PLU | S TAE | SULAR 11 | QUANTIT 12 | 1ES (| UNITS | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DAY | U | _ | 2 | 3 | 4 | 3 | 6 | , | 0 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 10 | 17 | 10 | 19 | 20 | 21 | 22 | 23 | MEAN |
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 D | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 6 Q | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 9 Q | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 11 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 16 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 D | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 D | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 D | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 D | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 D 22 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 24 25 Q | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 Q | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 Q | | | | | | | | | | | | | | | | | | | | | | | | | |
| 27 Q | | | | | | | | | | | | | | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 31 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| MEAN | | | | | | | | | | | | | | | | | | | | | | | | | |

| LIVINGSTON I JANUARY 2005 | | MAGN | ETIC | OBSER | VATOR | Y | | - 00 | ·F00 | | · | | TICAL IN QUANTIT | | | m\ | | | | | | | | | |
|------------------------------|---|------|------|-------|-------|---|---|------|------|---|-------|----|---------------------|----|-------------|----|-----|----|----|----|----|----|----|----|------|
| | | - | _ | 2 | | - | | | | | 5 TAB | | ~ | | UNITS 14 | | 1.0 | 17 | 10 | 10 | 00 | 01 | | 00 | |
| HOUR (UT) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 D | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 Q | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 11 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 14 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 17 D | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 D 18 D | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 D 19 D | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 D | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 22 23 | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 24 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 Q | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 Q | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 Q 27 Q | | | | | | | | | | | | | | | | | | | | | | | | | |
| 27 Q 28 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 31 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1477.17 | | | | | | | | | | | | | | | | | | | | | | | | | |
| MEAN | | | | | | | | | | | | | | | | | | | | | | | | | |
| MEAN Q | | | | | | | | | | | | | | | | | | | | | | | | | |

| | TOTAL INTENSITY ANUARY 2005 F = 35500 nt PLUS TABULAR QUANTITIES (UNITS nT) OUR(UT) 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 MEAN | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------|--|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| НОТ | JR (UT) | | 1 | 2 | 3 | 4 | 5 | | | | | | - | - | | | - | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | 302 | 300 | 290 | 290 | 291 | 294 | 280 | 284 | 283 | 272 | 262 | 254 | 249 | 253 | 259 | 254 | 254 | 278 | 286 | | 261 | 283 | 300 | 279 | 276 |
| | D | 297 | 292 298 | 293 296 | 292 291 | 295 289 | 288 270 | 291 | 260 276 | 255 273 | 248 264 | 254 251 | 245 242 | 240 | 234 | 232 243 | 223 262 | 247 271 | 271 258 | 286 293 | 282 300 | 298 294 | 291 299 | 297 295 | 312 291 | 272 |
| 3 4 | | 319 300 | 301 | 296 | 286 | 282 | 270 | 278 288 | 287 | 274 | 270 | 265 | 258 | 230 | 232 250 | 243 | 231 | 250 | 268 | | 288 | 284 | 299 | 293 | 306 | 276 276 |
| 5 | | 305 | 298 | 294 | 283 | 281 | 278 | 279 | 279 | 267 | 267 | 266 | 247 | 256 | 256 | 248 | 253 | 258 | 267 | 277 | 282 | 281 | 284 | 289 | 296 | 275 |
| , | | 303 | 290 | 293 | 203 | 201 | 270 | 213 | 213 | 207 | 207 | 200 | 247 | 230 | 230 | 240 | 233 | 230 | 207 | 211 | 202 | 201 | 204 | 209 | 290 | 273 |
| 6 | 0 | 297 | 294 | 293 | 290 | 287 | 285 | 284 | 283 | 282 | 276 | 267 | 263 | 256 | 249 | 247 | 247 | 252 | 270 | 286 | 294 | 285 | 284 | 289 | 285 | 277 |
| 7 | _ | 288 | 289 | 288 | 287 | 287 | 287 | 288 | 289 | 285 | 281 | 271 | 260 | 257 | 259 | 246 | 210 | 241 | 284 | 268 | 269 | 277 | 302 | 346 | 351 | 280 |
| 8 | | 322 | 322 | 292 | 286 | 297 | 294 | 284 | 276 | 279 | 270 | 257 | 252 | 252 | 245 | 241 | 246 | 255 | 275 | 279 | 281 | 289 | 292 | 282 | 276 | 277 |
| 9 | Q | 290 | 288 | 286 | 288 | 285 | 286 | 284 | 284 | 283 | 279 | 276 | 265 | 256 | 248 | 247 | 259 | 274 | 285 | 290 | 285 | 281 | 281 | 282 | 283 | 278 |
| 10 | | 287 | 293 | 291 | 291 | 294 | 292 | 296 | 295 | 292 | 284 | 275 | 268 | 255 | 246 | 242 | 247 | 258 | 268 | 279 | 289 | 296 | 294 | 288 | 295 | 280 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | | 294 | 290 | 290 | 290 | 288 | 282 | 274 | 281 | 273 | 272 | 268 | 257 | 243 | 236 | 234 | _ | 246 | 279 | 294 | 296 | 297 | 286 | 291 | 295 | 275 |
| 12 | | 288 | 303 | 320 | 265 | 271 | 303 | 305 | 291 | 288 | 280 | 257 | 265 | 266 | 243 | 241 | 234 | 244 | 254 | 271 | 278 | 289 | 303 | 306 | 302 | 278 |
| 13 | | 295 | 298 | 295 | 291 | 289 | 279 | 282 | 282 | 282 | 278 | 269 | 260 | 244 | 232 | 225 | 230 | 246 | 263 | 280 | 295 | 295 | 294 | 284 | 301 | 275 |
| 14 | | 293 | 293 | 294 | 291 | 288 | 284 | 278 | 280 | 279 | 271 | 266 | 260 | 250 | 239 | 229 | 224 | 232 | 252 | 262 | 279 | 301 | 296 | 315 | 302 | 273 |
| 15 | | 310 | 312 | 299 | 294 | 281 | 285 | 289 | 272 | 264 | 260 | 260 | 260 | 249 | 235 | 221 | 221 | 233 | 252 | 275 | 283 | 281 | 296 | 291 | 305 | 272 |
| | | | | | | | | | | | | | 0.50 | 0.00 | | 0=0 | | | 0.40 | 0.50 | | | | | | 0.00 |
| 16 | _ | 307 | 300 | 296 | 289 | 283 | 287 | 285 | 280 | 277 | 270 | 266 | 258 | 262 | 268 | 259 | 241 | | 249 | 258 | 273 | 286 | 309 | 304 | 318 | 278 |
| 17 | | 304 | 297 | 269 | 268 | 268 | 284 | 287 | 282 | 274 | 247 | 242 | 202 | 259 | 276 | 300 | 276 | 219 | 215 | 240 | 288 | 288 | 297 | 304 | 314 | 271 |
| 18 | | 308 | 293 | 299 | 286 | 246 | 267 | 270 | | 135 | 199 | 233 | 245 | 244 | 211 | 196 | 210 | 261 | 269 | 258 | 317 | 290 | 340 | 331 | 307 | 259 |
| 20 | D | 302 284 | 319 284 | 324 282 | 282 275 | 284 273 | 283 272 | 239 275 | 230 292 | 223 277 | 223 261 | 213 248 | 210 245 | 216 242 | 227 243 | 271 247 | 279 238 | 266 217 | 274 252 | 290 276 | 300 281 | 303 282 | 315 284 | 328 281 | 302 295 | 271 267 |
| 20 | | 204 | 204 | 202 | 275 | 213 | 212 | 275 | 232 | 211 | 261 | 240 | 243 | 242 | 243 | 24/ | 236 | 21/ | 232 | 276 | 201 | 202 | 204 | 201 | 293 | 207 |
| 21 | D | 285 | 296 | 285 | 285 | 287 | 283 | 279 | 276 | 278 | 268 | 258 | 253 | 253 | 258 | 260 | 260 | 269 | 240 | 339 | 419 | 402 | 405 | 384 | 348 | 299 |
| 22 | _ | 286 | 264 | 285 | 279 | 247 | 224 | 228 | 266 | 272 | 273 | 273 | 267 | 266 | 258 | 247 | 246 | 247 | 255 | 260 | 270 | 275 | 295 | 296 | 298 | 266 |
| 23 | | 293 | 295 | 297 | 282 | 282 | 283 | 281 | 269 | 273 | 269 | 271 | 258 | 247 | 246 | 239 | 237 | 240 | 257 | 272 | 277 | 280 | 287 | 286 | 279 | 271 |
| 24 | | 277 | 284 | 289 | 285 | 287 | 287 | 290 | 288 | 281 | 274 | 267 | 262 | 245 | 236 | 244 | 240 | 239 | 250 | 256 | 264 | 265 | 270 | 280 | 285 | 269 |
| 25 | Q | 286 | 289 | 287 | 284 | 284 | 284 | 282 | 282 | 280 | 279 | 279 | 270 | 259 | 244 | 235 | 234 | 247 | 262 | 272 | 273 | 274 | 279 | 275 | 278 | 272 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | Q | 282 | 284 | 284 | 281 | 285 | 285 | 284 | 284 | 282 | 276 | 269 | 264 | 255 | 241 | 236 | 238 | 245 | 256 | 264 | 276 | 279 | 272 | 273 | 277 | 270 |
| 27 | Q | 283 | 281 | 283 | 283 | 281 | 281 | 280 | 283 | 283 | 283 | 281 | 272 | 259 | 249 | 245 | 248 | 255 | 267 | 279 | 289 | 292 | 281 | 279 | 283 | 275 |
| 28 | | 285 | 281 | 283 | 280 | 282 | 281 | 279 | 280 | 278 | 276 | 267 | 255 | 244 | | 235 | 241 | 250 | 256 | 274 | 285 | 271 | 263 | 271 | 301 | 269 |
| 29 | | 283 | 280 | 289 | 287 | 288 | 290 | 285 | 279 | 281 | 278 | 268 | 263 | 248 | 241 | 234 | 231 | 261 | 268 | 278 | 267 | 266 | 286 | 297 | 274 | 272 |
| 30 | | 284 | 285 | 293 | 289 | 276 | 277 | 277 | 273 | 272 | 265 | 254 | 258 | 251 | 239 | 240 | 247 | 252 | 254 | 268 | 265 | 274 | 279 | 281 | | 268 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 31 | | | | 290 | | | | | | | | | | | | | | | | | | | | | 294 | |
| MEZ | N.NT | 295 | 293 | 292 | 285 | 282 | 282 | 290 | 276 | 271 | 267 | 262 | 255 | 250 | 245 | 243 | 241 | 249 | 262 | 276 | 287 | 288 | 295 | 297 | 298 | 274 |
| | AN O | 295 | 293 | 287 | 285 | 285 | 284 | 280 283 | 283 | 282 | 278 | 274 | 255 267 | 250 257 | 245 | 243 | 241 | 255 | 262 | 278 | 284 | 282 | 280 | 280 | 298 281 | 274 |
| | AN D | 299 | 299 | 294 | | 276 | 281 | 263 273 | 249 | 233 | | | 231 | 242 | | 252 | | 252 | 254 | 283 | | 316 | | 329 | 317 | 274 |
| MIC | ע אוד | 233 | 233 | 234 | 202 | 2/0 | 201 | 213 | 249 | 233 | 231 | 240 | 231 | 242 | 241 | 232 | 250 | 232 | 234 | 203 | 321 | 210 | 329 | 329 | 311 | 214 |

| | LIVINGSTON ISLAND MAGNETIC OBSERVATORY DECLINATION EAST TEBRUARY 2005 D = 14 DEGREES PLUS TABULAR QUANTITIES (UNITS 0.1 MINUTES) TOUR (UT) 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 MEAN | | | | | | | | | | | | | | | | | | | | | | | | |
|--------|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| | | - | 2 | 2 | | _ | | | | | | | | | - | | | - | 10 | 10 | 20 | 21 | 22 | 22 | MEAN |
| DAY | U | | 2 | 3 | 4 | 5 | 6 | , | 0 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 10 | 17 | 10 | 19 | 20 | 21 | 22 | 23 | MLAN |
| 1 | 398 | 394 | 405 | 405 | 402 | 397 | 393 | 389 | 383 | 382 | 370 | 369 | | | | | | | | | | | | | |
| 2 | | | 403 | 405 | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 Q | | | | | | | | | | | | | | | | | | | | | | | | 413 | |
| 5 Q | 406 | | 397 | 390 | 393 | 394 | 388 | 382 | 368 | 370 | 357 | 354 | 352 | 361 | 387 | 419 | 440 | 449 | 438 | | | 393 | 396 | 402 | 393 |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | 402 | 398 | 398 | 397 | 388 | 385 | 394 | 405 | 366 | 356 | 341 | 337 | 343 | 362 | 395 | 422 | 442 | 453 | 441 | 435 | 417 | 420 | 429 | | 398 |
| 7 D | 422 | 416 | 403 | 370 | 350 | 373 | 386 | 374 | 360 | 356 | 366 | 368 | 372 | 391 | 447 | 455 | 439 | 438 | 459 | 503 | 464 | 459 | 402 | 374 | 406 |
| 8 D | 428 | 438 | 423 | 434 | 385 | 378 | 367 | 361 | 366 | 408 | 403 | 383 | 392 | 425 | 447 | 448 | 449 | 472 | 477 | 444 | 440 | 416 | 370 | 410 | 415 |
| 9 D | 419 | 403 | 402 | 377 | 356 | 349 | 359 | 368 | 359 | 356 | 385 | 384 | 384 | 416 | 433 | 454 | 463 | 461 | 464 | 435 | 429 | 422 | 396 | 401 | 403 |
| 10 D | 399 | 386 | 388 | 386 | 395 | 399 | 391 | 399 | 400 | 383 | 385 | 371 | 378 | 402 | 425 | 431 | 456 | 460 | 465 | 443 | 413 | 411 | 400 | 406 | 407 |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | 414 | 410 | 399 | 372 | 382 | 380 | 399 | 396 | 378 | 371 | 354 | 361 | 382 | 407 | 425 | 443 | 457 | 457 | 455 | 462 | | 409 | 405 | 410 | 407 |
| 12 | 396 | 396 | 400 | 397 | 393 | 403 | 399 | | 373 | 363 | | | 366 | 380 | | | 442 | 453 | 452 | 437 | 425 | 415 | 409 | 406 | 403 |
| 13 Q | 399 | 394 | 399 | 395 | 394 | 396 | 392 | 385 | 380 | 370 | 357 | 347 | 357 | 375 | 399 | 429 | | | | | | | 414 | 413 | 397 |
| 14 | 410 | 413 | 406 | 394 | 362 | 369 | 370 | 370 | 365 | 353 | 348 | 351 | 370 | 387 | 407 | 428 | 451 | 472 | 469 | 462 | 455 | 441 | 426 | 418 | 404 |
| 15 Q | 415 | 412 | 412 | 408 | 403 | 393 | 394 | 376 | 371 | 364 | 356 | 351 | 357 | 373 | 401 | 415 | 423 | 431 | 426 | | 398 | | | 395 | 394 |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | 398 | 380 | 391 | 396 | 393 | 394 | 379 | 377 | 374 | 364 | 355 | 346 | 355 | 374 | | | 462 | 470 | 452 | 430 | 418 | 413 | 399 | 408 | 400 |
| 17 | 404 | 405 | 399 | 403 | 397 | 395 | 397 | 393 | 381 | 366 | 357 | 356 | | | | | | | | | | | | | |
| 18 D | | | | | | | | | | | | | | | | | | | | | 438 | 426 | 424 | 405 | |
| 19 | 392 | 404 | 407 | 407 | 406 | 399 | 389 | 405 | 405 | 358 | 343 | 361 | 407 | 420 | 423 | 433 | 443 | 451 | 450 | 435 | 431 | 435 | 424 | 412 | 410 |
| 20 | 379 | 393 | 408 | 408 | 408 | 395 | 375 | 375 | 377 | 364 | 355 | 356 | 367 | 396 | 420 | 439 | 446 | 445 | 444 | 447 | 440 | 430 | 419 | 410 | 404 |
| 21 | 385 | 395 | 390 | 383 | 383 | 367 | 375 | 386 | 388 | 386 | 379 | 376 | 384 | 397 | 423 | 445 | 447 | 443 | 436 | 431 | 422 | 412 | 403 | 399 | 401 |
| 22 | 401 | 400 | 401 | 401 | 386 | 389 | 373 | 387 | | 372 | | | 304 | <i></i> | 423 | 445 | 44/ | 443 | 436 | 431 | 422 | 412 | 403 | 399 | |
| 23 Q | 397 | | 401 | | 386 | 383 | 381 | 378 | 368 | 365 | 362 | 358 | 359 | 370 | 381 | 388 | 399 | | 412 | 409 | 414 | 409 | 406 | 401 | 387 |
| 24 | | | | 385 | 382 | 378 | 370 | 373 | 368 | 363 | 358 | | | 375 | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | | | | | | | | | | | | | | |
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| MEAN | | | | | | | | | | | | | | | | | | | | | | | | | |
| MEAN Q | | | | | | | | | | | | | | | | | | | | | | | | 405 | |
| MEAN D | | | | | | | | | | | | | | | | | | | | | 437 | 427 | 398 | 399 | |

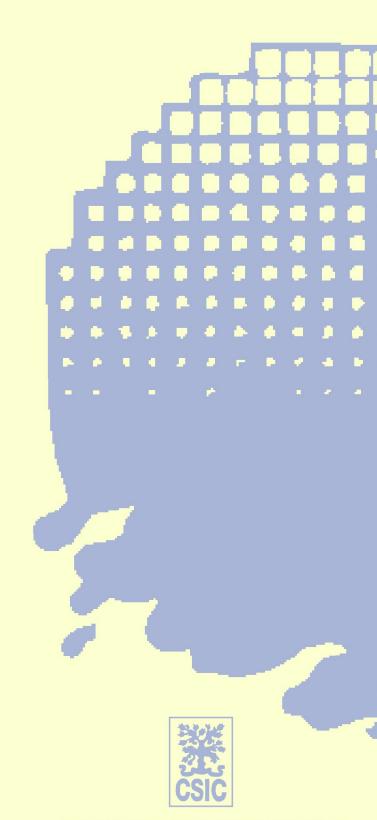
| | LIVINGSTON ISLAND MAGNETIC OBSERVATORY H = 20000 nT PLUS TABULAR QUANTITIES (UNITS nT) HOUR(UT) 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 MEAN | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|-----|------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| H | וטטו | | | 1 | 2 | 3 | 4 | 5 | | | | | | | _ | | • | • | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| | ΑY | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 3 | _ | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Q | | | | | | | | | | | | | | | | | | | | | | | | 148 | |
| | 5 | Q | 150 | | 153 | 155 | 154 | 150 | 147 | 148 | 148 | 147 | 142 | 135 | 130 | 130 | 131 | 132 | 133 | 141 | 150 | | | 155 | 157 | 160 | 146 |
| | 6 | | 161 | 164 | 161 | 159 | 160 | 163 | 159 | 158 | 154 | 149 | 143 | 130 | 123 | 124 | 130 | 144 | 152 | 150 | 145 | 147 | 133 | 145 | 140 | | 147 |
| | 7 | D | 142 | 152 | 154 | 143 | 140 | 149 | 163 | 156 | 157 | 155 | 150 | 148 | 146 | 140 | 120 | 143 | 158 | 156 | 163 | 118 | 126 | 106 | 109 | 127 | 143 |
| | 8 | D | 130 | 139 | 149 | 156 | 133 | 147 | 139 | 135 | 142 | 134 | 133 | 123 | 120 | 106 | 106 | 125 | 133 | 130 | 110 | 124 | 129 | 121 | 143 | 136 | 131 |
| | 9 | D | 141 | 139 | 149 | 166 | 159 | 149 | 150 | 146 | 143 | 134 | 123 | 125 | 117 | 102 | 111 | 118 | 126 | 142 | 136 | 144 | 140 | 130 | 128 | 128 | 135 |
| 1 | .0 | D | 127 | 135 | 137 | 135 | 140 | 143 | 137 | 133 | 137 | 131 | 135 | 127 | 120 | 109 | 105 | 116 | 126 | 127 | 146 | 133 | 149 | 145 | 141 | 150 | 133 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | .1 | | 153 | | 154 | | | 144 | | | | 145 | | | _ | | 112 | | _ | | _ | | | | | _ | 137 |
| | .2 | | 145 | _ | 150 | | | 153 | | | | 140 | | | _ | 120 | | | 110 | | 129 | 142 | 145 | | 147 | | 138 |
| | .3 | Q | 152 | | 147 | | | | | | | 146 | | | | | 117 | | | | | | | | 150 | 153 | 140 |
| _ | .4 | | _ | | | 163 | | 164 | 160 | | | 145 | | | | 127 | _ | | 126 | | | | 142 | | 142 | 143 | 144 |
| 1 | .5 | Q | 150 | 153 | 154 | 156 | 156 | 149 | 151 | 151 | 147 | 148 | 145 | 143 | 138 | 132 | 132 | 136 | 139 | 143 | 149 | | 143 | | | 157 | 147 |
| - | .6 | | 150 | 1 5 7 | 162 | 156 | 160 | 163 | 150 | 155 | 154 | 152 | 1 47 | 154 | 151 | 128 | 107 | 100 | 128 | 105 | 127 | 129 | 129 | 131 | 112 | 120 | 142 |
| | . o . 7 | | 158 143 | _ | 148 | | | | | | | 140 | | | 151 | 120 | 127 | 128 | 120 | 125 | | 129 | 129 | | 113 | 120 | 142 |
| | . 8 | D | 143 | 14/ | | | | 151 | 140 | 144 | | | 136 | 134 | | | | | | | | | 120 | 126 | 130 | 127 | |
| | 9 | ט | 133 | 125 | 136 | | | | 152 | | | 153 | 140 | | 121 | 121 | | | 127 | | 119 | 124 | | 137 | 139 | 146 | 135 |
| | 0 | | | | 144 | | | | | | | 135 | | | | | 115 | | | | 128 | | 120 | _ | | | 130 |
| _ | .0 | | 129 | 132 | 144 | 140 | 143 | 131 | 144 | 139 | 139 | 133 | 130 | 124 | 119 | 113 | 113 | 11, | 120 | 131 | 120 | 124 | 120 | 123 | 124 | 122 | 130 |
| 2 | 1 | | 124 | 125 | 117 | 122 | 124 | 130 | 132 | 134 | 136 | 133 | 131 | 129 | 129 | 132 | 131 | 134 | 139 | 141 | 144 | 141 | 138 | 136 | 132 | 139 | 132 |
| 2 | 2 | | 144 | 148 | 153 | 157 | 157 | 153 | 150 | 149 | | 148 | | | | | | | | | | | | | | | |
| 2 | 23 | Q | 146 | | | | 154 | 159 | 160 | 158 | 156 | 156 | 154 | 151 | 148 | 145 | 140 | 137 | 137 | | 141 | 146 | 157 | 150 | 157 | 158 | 150 |
| 2 | 4 | | | | | 159 | 157 | 155 | 153 | 153 | 152 | 151 | 147 | | | 137 | | | | | | | | | | | |
| 2 | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | . 7 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| _ | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| _ | . • | | | | | | | | | | | | | | | | | | | | | | | | | | |
| M | ŒAI | N | | | | | | | | | | | | | | | | | | | | | | | | | |
| M | ŒAI | Q I | | | | | | | | | | | | | | | | | | | | | | | | 155 | |
| _ | | | | | | | | | | | | | | | | | | | | | | | 400 | | 400 | | |

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| | LIVINGSTON ISLAND MAGNETIC OBSERVATORY VERTICAL INTENSITY FEBRUARY 2005 Z =-29500 nT PLUS TABULAR QUANTITIES (UNITS nT) HOUR(UT) 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 MEAN | | | | | | | | | | | | | | | | | | | | | | | | |
|------------|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|
| | | - | • | _ | | - | | | | | | | - | | • | • | 1.0 | 17 | 10 | 10 | 20 | 01 | 20 | 00 | |
| DAY | U | 1 | 2 | 3 | 4 | 5 | 0 | , | • | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 10 | 17 | 10 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DAI 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 Q | | | | | | | | | | | | | | | | | | | | | | | | -64 | |
| 4 Q 5 Q | | | | | | | | | | | | | | 45 | | | | | -58 | | | | | ٠. | |
| 5 Q | -68 | | -68 | -68 | -65 | -62 | -60 | -62 | -63 | -58 | -56 | -54 | -50 | -45 | -31 | -28 | -33 | -44 | -58 | | | -65 | -63 | -62 | -57 |
| 6 | -63 | -67 | -65 | -64 | -66 | -63 | -55 | -48 | -49 | -53 | -55 | -48 | -40 | -35 | -35 | -41 | -52 | -59 | -59 | -67 | -65 | -71 | -76 | | -56 |
| 7 D | -73 | -75 | -75 | -69 | -63 | -69 | -75 | -69 | -73 | -67 | -59 | -50 | -46 | -37 | -16 | -38 | -49 | -47 | -56 | -52 | -67 | -73 | -99 | -101 | -62 |
| 8 D | -87 | -83 | -84 | -49 | -54 | -65 | -63 | -65 | -69 | -56 | -54 | -53 | -51 | -41 | -37 | -48 | -54 | -52 | -48 | -74 | -77 | -81 | -97 | -77 | -63 |
| 9 D | -77 | -77 | -81 | -80 | -63 | -59 | -36 | -32 | -56 | -53 | -44 | -44 | -48 | -35 | -35 | -37 | -44 | -53 | -55 | -64 | -62 | -71 | -74 | -82 | -57 |
| 10 D | -77 | -81 | -73 | -70 | -71 | -62 | -64 | -59 | -60 | -61 | -58 | -53 | -48 | -44 | -40 | -52 | -53 | -57 | -73 | -71 | -86 | -80 | -76 | -75 | -64 |
| 11 | -72 | -72 | -69 | -62 | -57 | -62 | -60 | -66 | -68 | -64 | -60 | -44 | -41 | -37 | -35 | -36 | -40 | -47 | -52 | -54 | | -78 | -76 | -71 | -58 |
| 12 | | | | -66 | _ | | | | | -68 | | | | | | | | | | | -73 | | | . – | -62 |
| 13 0 | | | | -64 | | | | | | -64 | | | -44 | | -36 | | | | | | | | -64 | -66 | -58 |
| 14 | | | | -67 | | | | | | -60 | | | | | -35 | _ | | | | | -62 | | | -70 | -56 |
| 15 0 | | | | -67 | | | | | | -64 | | | -53 | | -42 | | | | | | -68 | | | . • | -59 |
| 13 2 | , 3 | | 00 | 0, | 00 | 02 | 00 | 00 | 02 | 0-1 | 00 | 30 | 33 | -10 | | | -10 | 40 | 33 | | 00 | | | 03 | 33 |
| 16 | -65 | -62 | -62 | -61 | -62 | -63 | -58 | -57 | -59 | -59 | -54 | -53 | -49 | -33 | -28 | -34 | -39 | -43 | -58 | -64 | -64 | -72 | -69 | -66 | -56 |
| 17 | -78 | -76 | -73 | -68 | -65 | -61 | -61 | -61 | -62 | -60 | -54 | -49 | | | | | | | | | | | | | |
| 18 D | | | | | | | | | | | | | | | | | | | | | -68 | -73 | -76 | -76 | |
| 19 | -78 | -73 | -69 | -69 | -68 | -71 | -69 | -51 | -39 | -46 | -49 | -52 | -37 | -45 | -42 | -45 | -50 | -53 | -52 | -62 | -69 | -78 | -69 | -80 | -59 |
| 20 | -76 | -69 | -72 | -70 | -66 | -64 | -48 | -58 | -66 | -67 | -62 | -54 | -46 | -40 | -41 | -41 | -45 | -49 | -52 | -58 | -63 | -65 | -73 | -73 | -59 |
| 21 | -76 | -74 | -69 | -70 | -69 | -68 | -66 | -66 | -66 | -65 | -63 | -56 | -50 | -47 | -44 | -43 | -46 | -56 | -64 | -67 | -69 | -69 | -66 | -70 | -62 |
| 22 | | | | -69 | | | | | | -59 | | | | | | | | | | | | | | | |
| 23 0 | -66 | | | | -66 | -66 | -63 | | | -60 | | | -48 | -42 | -40 | -40 | -42 | | -47 | -51 | -57 | -54 | -59 | -60 | -55 |
| 24 | | | | -59 | | | | | | -55 | | | | -41 | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | | | | | | | | | | | | | | |
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| LIVINGSTON ISLAND MAGNETIC OBSERVATORY FEBRUARY 2005 F = 35500 nT | | | | | | | | | | | | | | L INTEN | | UNIT | 'S nT) | | | | | | | | | |
|---|---------|-----|-----|------------|------------|------------|-----|-----|------------|------------|------------|------------|-----|---------|-----|------|--------|------|------|------|------|------|-----|------|------|------|
| HO | UR (UT) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | MEAN |
| DA: | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | 287 | 281 | 277 | 277 | 275 | 274 | 274 | 274 | 271 | 267 | 267 | 264 | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | - | | | | | | | | | | | | | | | | | | | | | | | | 277 | |
| 5 | Q | 281 | | 283 | 284 | 281 | 276 | 273 | 275 | 276 | 271 | 267 | 261 | 255 | 251 | 245 | 238 | 243 | 257 | 273 | | | 282 | 281 | 281 | 269 |
| 6 | | 283 | 288 | 285 | 283 | 285 | 284 | 276 | 269 | 268 | 268 | 266 | 253 | 243 | 239 | 242 | 255 | 268 | 274 | 271 | 279 | 269 | 281 | 282 | | 270 |
| 7 | D | 281 | 288 | 290 | 278 | 271 | 282 | 294 | 285 | 289 | 283 | 273 | 265 | 260 | 250 | 221 | 252 | 270 | 268 | 278 | 250 | 267 | 261 | 284 | 295 | 272 |
| 8 | D | 286 | 288 | 293 | 269 | 260 | 277 | 271 | 270 | 277 | 262 | 260 | 254 | 250 | 234 | 230 | 251 | 260 | 257 | 242 | 272 | 277 | 275 | 301 | 280 | 267 |
| 9 | D | 284 | 282 | 291 | 300 | 282 | 273 | 255 | 249 | 267 | 260 | 246 | 247 | 246 | 227 | 232 | 238 | 247 | 265 | 262 | 275 | 271 | 273 | 273 | 280 | 264 |
| 10 | D | 276 | 283 | 278 | 274 | | 272 | 270 | 265 | 267 | | 264 | | 248 | 238 | 232 | | 255 | 259 | 283 | 275 | 295 | 288 | 282 | 287 | 268 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | | 286 | 287 | 285 | 279 | 271 | 273 | 273 | 280 | 279 | 275 | 268 | 247 | 244 | 238 | 232 | 233 | 239 | 251 | 259 | 258 | | 285 | 282 | 280 | 266 |
| 12 | | 282 | 283 | 281 | 279 | 276 | 279 | 273 | | 276 | 276 | | | 254 | 247 | | | 239 | 250 | 257 | 276 | 283 | 284 | 282 | 283 | 269 |
| 13 | Q | 285 | 284 | 278 | 277 | 275 | 272 | 275 | 276 | 275 | 276 | | 260 | 248 | 239 | 236 | 236 | | | | | | | 278 | 281 | 267 |
| 14 | | 282 | 282 | 285 | 288 | 287 | 283 | 281 | 268 | | 272 | | 261 | 253 | 246 | 238 | 238 | 244 | 252 | 262 | 273 | 272 | | 276 | 279 | 268 |
| 15 | Q | 287 | 285 | 283 | 284 | 283 | 276 | 275 | 275 | 275 | 276 | 272 | 267 | 262 | 253 | 249 | 251 | 251 | 259 | 269 | | 277 | | | 283 | 272 |
| | | 000 | 000 | 000 | 070 | 001 | 004 | 077 | 075 | 076 | 075 | 0.60 | 071 | 0.00 | 040 | 005 | 040 | 0.45 | 0.46 | 0.60 | 0.66 | 0.67 | 074 | 0.61 | 0.60 | 0.67 |
| 16 | | 283 | 280 | 283 284 | 279 280 | 281 280 | 284 | 277 | 275 272 | 276 272 | 275 268 | 268 261 | 271 | 266 | 240 | 235 | 240 | 245 | 246 | 260 | 266 | 267 | 274 | 261 | 263 | 267 |
| 17 | _ | 285 | 286 | 284 | 280 | | 275 | 272 | | | | | 257 | | | | | | | | | | | | | |
| 18 | D | | | | | | | | | | | | | | | | | | | | | 264 | 271 | 277 | 275 | |
| 19 | | 280 | 277 | 274 | 275 | 276 | 283 | 284 | 264 | 258 | 264 | 260 | 260 | 239 | 246 | 242 | 246 | 253 | 254 | 251 | 261 | 273 | 282 | 276 | 289 | 265 |
| 20 | | 275 | 272 | 282 | 281 | 277 | 278 | 262 | 267 | 273 | 272 | 265 | 255 | 246 | 237 | 240 | 240 | 248 | 254 | 256 | 259 | 261 | 263 | 270 | 269 | 263 |
| 21 | | 273 | 272 | 263 | 267 | 268 | 270 | 269 | 271 | 272 | 269 | 266 | 259 | 254 | 253 | 251 | 252 | 256 | 266 | 275 | 275 | 275 | 274 | 269 | 276 | 267 |
| 22 | | 280 | 281 | 283 | 286 | 284 | 279 | 275 | 274 | | 273 | | | | | | | | | | | | | | | |
| 23 | 0 | 277 | | | | 282 | 285 | 283 | 280 | 279 | 278 | 275 | 271 | 263 | 257 | 252 | 251 | 252 | | 259 | 265 | 276 | 270 | 278 | 279 | 271 |
| 24 | _ | | | | 278 | 276 | 275 | 272 | 272 | 272 | 271 | 266 | | | 252 | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| ME | | | | | | | | | | | | | | | | | | | | | | | | | 200 | |
| | AN Q | | | | | | | | | | | | | | | | | | | | | 075 | 074 | | 280 | |
| ME | AN D | | | | | | | | | | | | | | | | | | | | | 2/5 | 274 | 283 | 284 | |





Universitat Ramon Llull

Instituto Universitario de la URL

Consejo Superior de Investigaciones Científicas

Centro asociado del CSIC