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Boletin del Observatorio del Ebro Observaciones geomagnéticas en la isla Livingston - Antartida

Consejo Superior de Investigaciones Científicas – Universitat Ramon Llull

BOLETÍN DEL OBSERVATORIO DEL EBRO

OBSERVACIONES GEOMAGNÉTICAS DE LA ISLA LIVINGSTON 2007

LIVINGSTON ISLAND GEOMAGNETIC OBSERVATIONS 2007

S. Marsal, J.M. Torta, J.J. Curto, J.G. Solé

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Por - by

S. Marsal, J.M. Torta, J.J. Curto, J.G. Solé.

OBSERVATORI DE L'EBRE
Roquetes
2008

1. INTRODUCCIÓN

En este Boletín se presentan las observaciones magnéticas registradas en el Observatorio Geomagnético de la Isla Livingston durante el año 2007. La instalación y operación del Observatorio se enmarcaron en el Proyecto ANT95-0994-C03 del Programa Nacional de Investigación en la Antártida. 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, 2005, 2006, 2007) se han ido resumiendo sucesivamente las medidas realizadas desde esa fecha hasta el 27 de Febrero de 2007, cuando el personal científico y técnico abandonó la BAE al final de la Campaña 2006-2007 (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 2007, habiéndose podido recuperar los datos de cada uno de esos períodos al inicio de la campaña siguiente . El personal desplazado a la BAE (Santiago Marsal y Juan José Curto) ha cubierto la campaña 2007-2008 entre el 12 de Diciembre de 2007 y el 25 de Febrero de 2008.

La invernada correspondiente a este Boletín presenta dos períodos considerables sin valores por cortes en el suministro eléctrico desde la BAE, que son desde el 17 hasta el 28 de Julio y del 21 de Octubre al 8 de Diciembre.

Se puede obtener más información dirigiéndose a:

Observatori de l'Ebre	**Tel.:**	**977 50 05 11**
Datos Antárticos	**Fax:**	**977 50 46 60**
43520 Roquetes (Tarragona)	**e_mail:**	**smarsal@obsebre.es**
		jmtorta@obsebre.es

Los valores del campo registrados por el Observatorio se transmiten vía satélite utilizando el satélite GOES-E hasta el Geomagnetic Information Node (GIN) de la red INTERMAGNET de Ottawa, donde son recuperados por el *Observatori de l'Ebre*.

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"**	**S**
Longitud Geográfica	**60°**	**23'**	**41"**	**W**
Latitud Geomagnética*	**52°**	**37'**	**22"**	**S**
Longitud Geomagnética*	**8°**	**35'**	**18"**	**E**
Altitud s.n.m.			**19.4 m**	

*Calculado a partir de la 10ª generación del IGRF.

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) y en Marsal et al. (2007).

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 δD/δI. 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 el exterior de la 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, Torta et al., 1997b, o Marsal y Torta, 2007).

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 -2.1 nT ($F_{\text{pilar fundamental}} - F_{\text{magnetómetro vector}}$) durante la campaña 2007-2008.

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 para D e I 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).

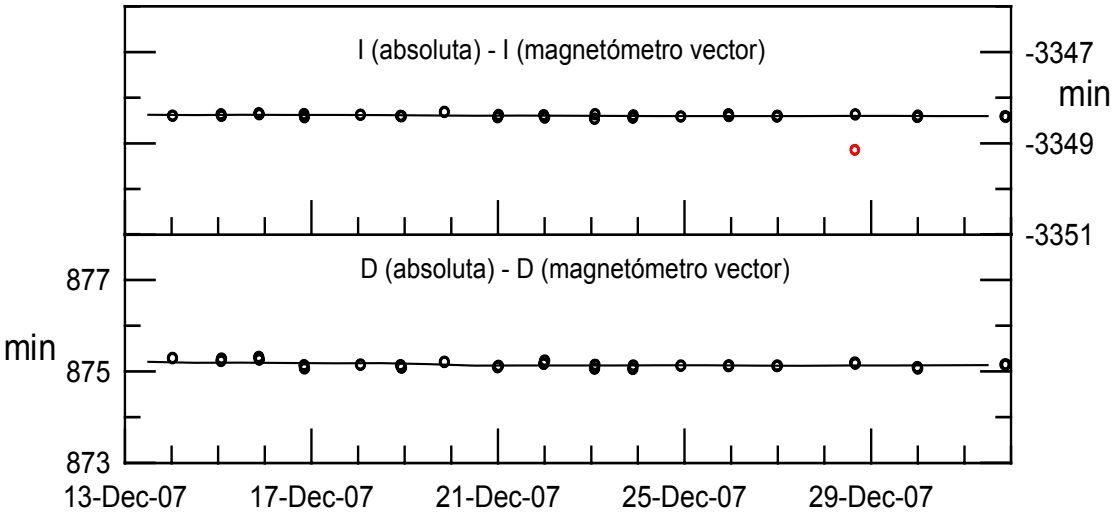

Fig. 1. Diferencias observadas (círculos) y líneas de base adoptadas (líneas continuas) para los dos elementos D e I. Los círculos en rojo corresponden a las diferencias descartadas antes de la adopción de la línea de base.

Aunque la evolución de las líneas de base durante el periodo sin medidas absolutas es desconocida, cabe resaltar su considerable estabilidad interanual a lo largo de los últimos años. Teniendo en cuenta que una variación de 1 minuto de arco en declinación equivale a una variación de 5.8 nT en la dirección del Este magnético, la deriva interanual de la línea de base de esta componente no ha superado las 3 nT.

Equivalentemente, una variación de 1 minuto de arco para la inclinación magnética supone un cambio de 8.6 y 5.8 nT en las intensidades horizontal y vertical (H y Z) respectivamente, lo que se traduce en

una variación interanual total del orden de 1nT para Z y algo inferior para H.

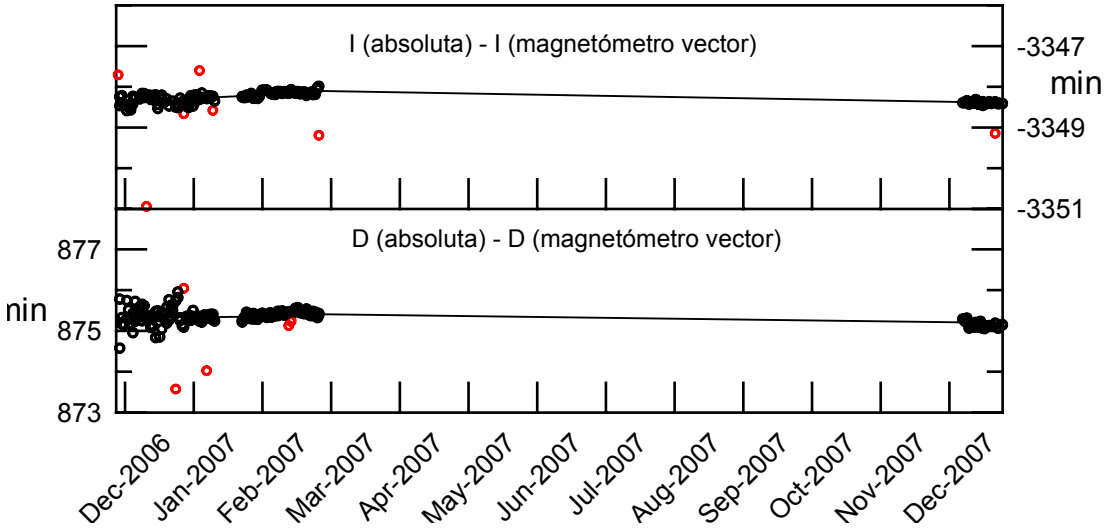

Fig. 2. Equivalente a la fig. 1 para el período completo de registro desde finales de Noviembre de 2006

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.

Año	D	H	Z	X	Y	I	F
1997.5	14º 55.5'	20522	-30040	19830	5286	-55º 39.7'	36380
1998.5	14º 54.7'	20465	-29976	19776	5266	-55º 40.7'	36295
1999.5	14º 53.5'	20415	-29910	19729	5246	-55º 41.1'	36213
2000.5	14º 52.4'	20369	-29855	19686	5228	-55º 41.8'	36141
2001.5	14º 49.8'	20319	-29786	19642	5201	-55º 42.0'	36057
2002.5	14º 47.1'	20262	-29717	19591	5171	-55º 42.7'	35967
2003.5	14º 45.0'	20210	-29665	19544	5146	-55º 44.1'	35895
2004.5	14º 42.0'	-	-	-	-	-	35813
2005.5	14º 39.5'	20113	-29536	19459	5088	-55º 44.7'	35738
2006.5	14º 36.3'	20072	-29471	19423	5061	-55º 44.5'	35657
2007.5	14º 33.5'	20025	-29414	19382	5034	-55º 45.2'	35583

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	H	Z	X	Y	I	F
1997.0	14º 55.7'	20554	-30065	19860	5295	-55º 38.5'	36419
1998.0	14º 54.8'	20504	-29995	19814	5277	-55º 38.6'	36334
1999.0	14º 53.9'	20447	-29934	19759	5257	-55º 39.9'	36250
2000.0	14º 52.7'	20399	-29868	19715	5238	-55º 40.1'	36169
2001.1	14º 50.5'	20345	-29799	19666	5211	-55º 40.6'	36082
2002.0	14º 48.6'	20298	-29738	19624	5188	-55º 41.0'	36005
2003.0	14º 45.9'	20246	-29679	19578	5160	-55º 42.0'	35927
2004.0	14º 43.8'	20194	-29630	19530	5135	-55º 43.4'	35857
2005.0	14º 41.4'	20144	-29564	19486	5109	-55º 43.8'	35775
2006.0	14º 37.8'	20102	-29494	19451	5077	-55º 43.4'	35693
2007.0	14º 35.0'	20048	-29438	19402	5048	-55º 44.6'	35616
2008.0	14º 31.8'	19999	-29372	19359	5018	-55º 45.0'	35534

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 y Acciones especiales o complementarias ANT95-0994-C03, ANT97-1863-E, ANT98-0886, ANT-981604-E, REN2000-0833, REN2000-2468-E, REN2003-08376-C02-02, CGL2005-24190-E/ANT y CGL2006-12437-C02-02 de los sucesivos Planes Nacionales de I+D+I. Además de los autores de este Boletín, forman o han formado parte de los grupos investigadores las siguientes personas: L. F. Alberca, D. Altadill, E.M. Apostolov, C. Bianchi, I. Blanco, E. Blanch, J.O. Cardús, B. Casas, A. García, L.R. Gaya-Piqué, J. Merino, E. Sanclement, A. De Santis, J. Seguí y A. Ugalde. Los autores desean expresar su más sincero agradecimiento al personal técnico y científico de la BAE en las distintas campañas desde que se instaló el Observatorio, 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.

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1. INTRODUCTION

In this Bulletin we give details of the magnetic observations recorded at the Livingston Island Geomagnetic Observatory during 2007. Both its installation and operation were on behalf of the National Program for Antarctic Research Project ANT95-0994-C03. 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 δD/δI 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, 2005, 2006, 2007) the measurements made between that date and February 27, 2007 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.*
Two people (Santiago Marsal and Juan José Curto) covered the 2007-2008 survey between December 12, 2007 and February 25, 2008.

The winter epoch corresponding to this Bulletin presents two considerable periods without data which are from July 17 to July 28 and from November 21 to December 8.

It is possible to obtain more information applying to:

Observatori de l'Ebre	***Tel.: +34 977 50 05 11***
Antarctic Data	***Fax: +34 977 50 46 60***
43520 Roquetes (Tarragona)	***e-mail: smarsal@obsebre.es***
SPAIN	***jmtorta@obsebre.es***

Data recorded at the Observatory are transmitted via GOES-E satellite to the INTERMAGNET Geomagnetic Information Node (GIN) at Ottawa, being them afterwards retrieved by Ebre Observatory.

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 δD/δI 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	***60°***	***23′***	***41″***	***W***
Geomagnetic latitude*	***52°***	***37′***	***22″***	***S***
Geomagnetic longitude*	***8°***	***35′***	***18″***	***E***
Height above msl			***19.4 m***	

** Computed from the 10th Generation of IGRF.*

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 δD/δI 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) and Marsal et al. (2007).*

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 δD/δI 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 outside the 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, Torta et al., 1997b, or Marsal & Torta, 2007).

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 δD/δI 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 -2.1 nT ($F_{absolute\ pillar} - F_{vector\ magnetometer}$) for the 2007-2008 survey .

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 for D and I 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).

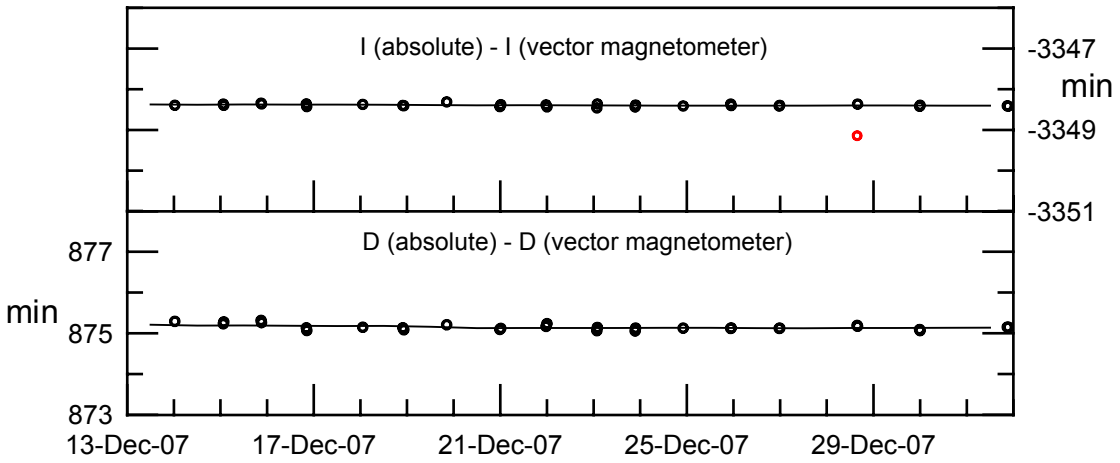

Fig. 1. Observed differences (circles) and adopted base-lines (lines) for the two elements I and D during the last survey. Red circles correspond to differences removed before the adoption of the baseline.

Although the baselines evolution during the preriod without absolute control is unknown, its present year-to-year stability should be noted. Taking into account that a change of one minute of arc in declination implies a variation of 5.8 nT in the East magnetic direction, the year-to-year drift of this component baseline did not exceed the value of 3 nT.

Equivalently, a variation of one minute of arc in the magnetic inclination entails a change of 8.6 and 5.8 nT in the horizontal and vertical intensities (H and Z) respectively, which means a total year-to-year variation about 1 nT for Z lower for H.

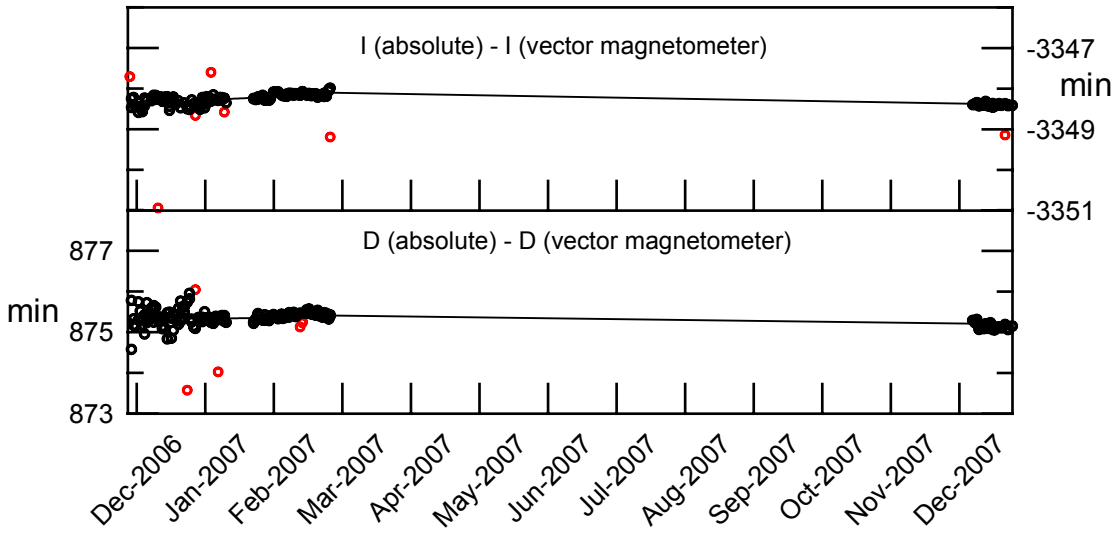

Fig. 2. As figure 1 but for the complete recording period from end of November 2006.

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.

Year	D	H	Z	X	Y	I	F
1997.5	14º 55.5'	20522	-30040	19830	5286	-55º 39.7'	36380
1998.5	14º 54.7'	20465	-29976	19776	5266	-55º 40.7'	36295
1999.5	14º 53.5'	20415	-29910	19729	5246	-55º 41.1'	36213
2000.5	14º 52.4'	20369	-29855	19686	5228	-55º 41.8'	36141
2001.5	14º 49.8'	20319	-29786	19642	5201	-55º 42.0'	36057
2002.5	14º 47.1'	20262	-29717	19591	5171	-55º 42.7'	35967
2003.5	14º 45.0'	20210	-29665	19544	5146	-55º 44.1'	35895
2004.5	14º 42.0'	-	-	-	-	-	35813
2005.5	14º 39.5'	20113	-29536	19459	5088	-55º 44.7'	35738
2006.5	14º 36.3'	20072	-29471	19423	5061	-55º 44.5'	35657
2007.5	14º 33.5'	20025	-29414	19382	5034	-55º 45.2'	35583

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

Year	D	H	Z	X	Y	I	F
1997.0	14º 55.7'	20554	-30065	19860	5295	-55º 38.5'	36419
1998.0	14º 54.8'	20504	-29995	19814	5277	-55º 38.6'	36334
1999.0	14º 53.9'	20447	-29934	19759	5257	-55º 39.9'	36250
2000.0	14º 52.7'	20399	-29868	19715	5238	-55º 40.1'	36169
2001.1	14º 50.5'	20345	-29799	19666	5211	-55º 40.6'	36082
2002.0	14º 48.6'	20298	-29738	19624	5188	-55º 41.0'	36005
2003.0	14º 45.9'	20246	-29679	19578	5160	-55º 42.0'	35927
2004.0	14º 43.8'	20194	-29630	19530	5135	-55º 43.4'	35857
2005.0	14º 41.4'	20144	-29564	19486	5109	-55º 43.8'	35775
2006.0	14º 37.8'	20102	-29494	19451	5077	-55º 43.4'	35693
2007.0	14º 35.0'	20048	-29438	19402	5048	-55º 44.6'	35616
2008.0	14º 31.8'	19999	-29372	19359	5018	-55º 45.0'	35534

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%.

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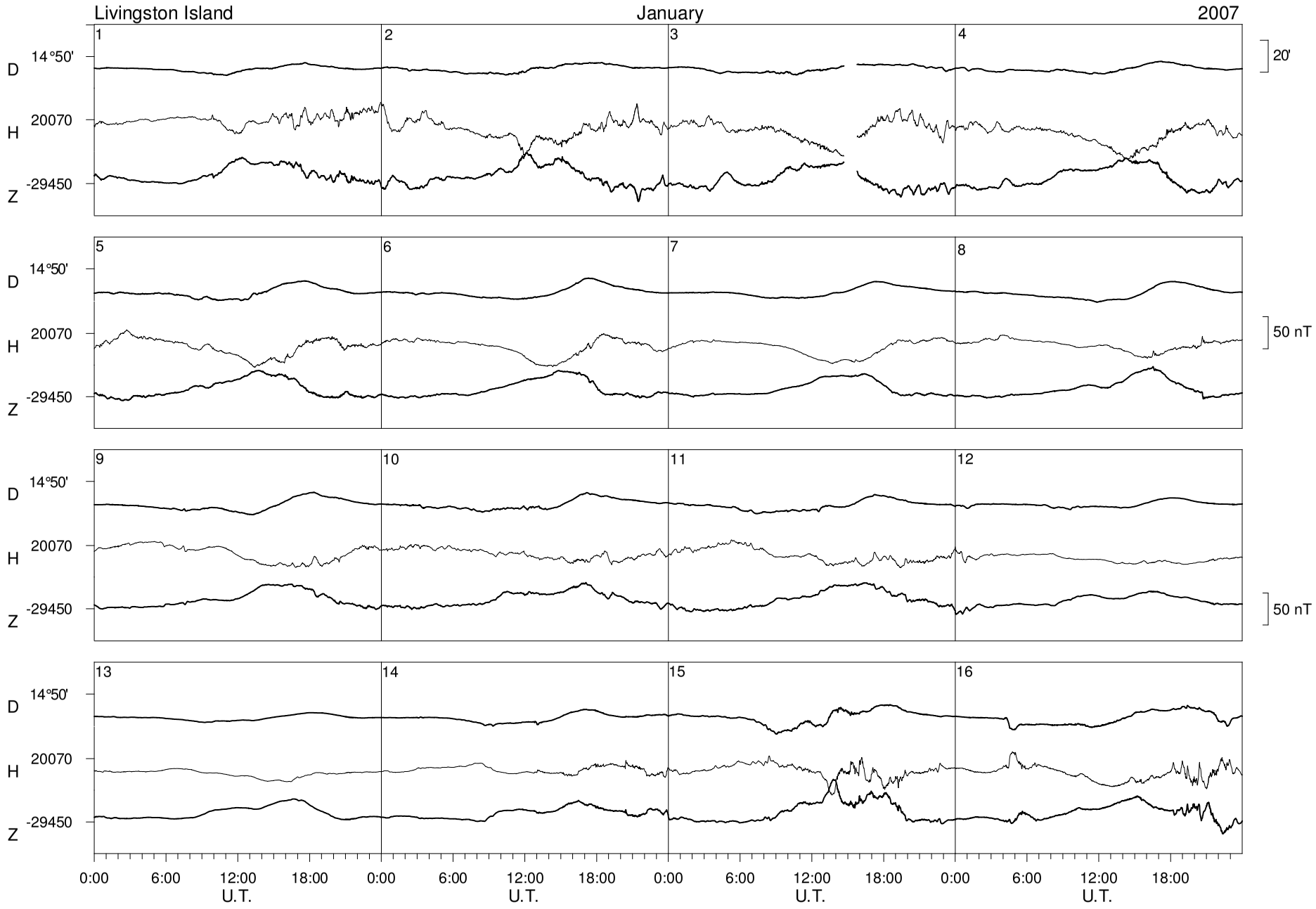
K INDICES & DAILY K SUMS AT LIVINGSTON ISLAND (K=9 LIMIT: 450 nT) FOR 2007

Date	JAN2007	FEB2007	MAR2007	APR2007	MAY2007	JUN2007
1	2123 3333 20	3222 2123 17	4322 2211 17	D5454 3335 32	4430 1112 16	2311 0111 10
2	D4323 3334 25	1111 1211 9	0111 0111 6	D5543 2234 28	Q2200 0001 5	1221 0101 8
3	D2323 --34 -	1111 0111 7	Q0000 1110 3	3322 1322 18	1021 0111 7	D2211 1222 13
4	3333 2223 21	Q1111 0112 8	0121 1012 8	34-- ---3 -	2100 0000 3	2311 1110 10
5	3222 3222 18	2122 1222 14	3123 2132 17	1120 0111 7	Q2010 0000 3	Q0000 0001 1
6	2111 1222 12	2322 1121 14	D4532 3114 23	2211 0001 7	Q1000 0000 1	Q0000 0000 0
7	Q1111 1122 10	D3233 3332 22	D4333 2324 24	3200 0000 5	D1232 2323 18	Q1000 0000 1
8	1101 1221 9	2322 2222 17	3100 0110 6	Q1001 1002 5	2422 2233 20	1210 0113 9
9	1121 1122 11	2221 1211 12	Q0100 1111 5	4331 1010 13	2211 1011 9	2233 1113 16
10	2222 2232 17	2110 1222 11	1111 1121 9	2001 1222 10	1000 0021 4	33-- -0-- -
11	2222 3223 18	0000 1121 5	0113 2232 14	2210 0001 6	0010 0001 2	Q---- ---- -
12	3012 0100 7	0012 2323 13	2213 3233 19	2212 2111 12	Q0100 0000 1	Q---- ---- -
13	Q0011 0100 3	D3322 1345 23	D5433 3233 26	Q0010 0000 1	Q0211 0000 4	--00 1121 -
14	0012 2123 11	D4333 2342 24	D3312 2231 17	0110 0103 6	0001 0010 2	D3343 2234 24
15	2244 4432 25	D2313 1232 17	2232 1223 17	3311 1000 9	2111 1110 8	2321 1101 11
16	1322 2244 20	2122 2223 16	4311 2124 18	Q0000 0000 0	1100 0002 4	2211 3110 11
17	D4433 3343 27	2211 2213 14	3221 1220 13	0112 2223 13	2211 0013 10	2121 210- -
18	2332 2333 21	2011 1211 9	1001 1100 4	3321 0122 14	D3353 2222 22	---- 0111 -
19	2312 2223 17	0001 1211 6	Q0101 0000 2	3221 1001 10	-333 --23 -	---- 0100 -
20	3221 1123 15	Q0101 11-- -	Q0000 0010 1	Q2210 0000 5	4222 1113 16	1000 0--- -
21	3312 2221 16	Q1110 0110 5	Q0111 0100 4	Q1110 0000 3	3100 0112 8	D03-- -2-- -
22	1112 1121 10	Q1100 1211 7	111- ---- -	2221 2222 15	2111 1234 15	D-332 2123 -
23	1101 1121 8	2100 0121 7	2--- --24 -	5531 0100 15	D5355 4234 31	4331 0112 15
24	Q1000 0122 6	Q3011 1011 8	D4544 3122 25	1110 0011 5	D6442 2355 31	2211 2121 12
25	Q--11 ---1 -	2100 0112 7	3223 3112 17	3200 1100 7	D3332 2243 22	2100 0102 6
26	Q2011 1111 8	3422 0001 12	1222 2323 17	2111 1212 11	4533 2222 23	0000 0000 0
27	1211 1112 10	0133 1333 17	2333 1232 19	D3213 1134 18	3332 2322 20	3220 0101 9
28	3222 1222 16	D3343 2234 24	3221 1110 11	D4444 3334 29	3311 0000 8	2101 1001 6
29	D3243 --44 -		1100 0001 3	D4344 2234 26	1210 1101 7	D1111 1222 11
30	D3432 23-3 -		21-- ---0 -	5443 1211 21	2110 0000 4	2311 0000 7
31	3223 2333 21		0011 1012 6		0000 0011 2	
Mean K sum	14.9	12.8	12.5	12.1	10.9	9.0

Date	JUL2007	AUG2007	SEP2007	OCT2007	NOV2007	DEC2007
1	2211 1002 9	D---- -224 -	223- 2223 -	3222 1111 13	---- ---- -	---- ---- -
2	0012 0000 3	--21 1110 -	D4433 3233 25	2222 0013 12	Q---- ---- -	---- ---- -
3	00-- ---- -	1210 1101 7	2332 3213 19	D3332 3223 21	Q---- ---- -	Q---- ---- -
4	D--34 2221 -	Q0000 0000 0	2221 1011 10	4322 2220 17	---- ---- -	Q---- ---- -
5	1221 101- -	Q0000 0011 2	3342 2122 19	2221 1110 10	---- ---- -	---- ---- -
6	1210 1112 9	D0022 2225 15	3212 1234 18	1011 1111 7	Q---- ---- -	---- ---- -
7	3210 0012 9	D6332 2333 25	4311 1211 14	1001 1100 4	Q---- ---- -	Q---- ---- -
8	---- --00 -	3321 1001 11	2121 0121 10	Q0000 0001 1	---- ---- -	Q---- -111 -
9	Q1100 0100 3	2111 0100 6	Q0001 1100 3	Q0000 0000 0	---- ---- -	1111 1221 10
10	00-- ---- -	D11-- 3-43 -	Q0000 0110 2	Q0110 0000 2	---- ---- -	1222 1234 17
11	D---- 2211 -	3221 1132 15	Q0010 0011 3	Q0000 0000 0	Q---- ---- -	D3232 3233 21
12	1220 0011 7	2122 1100 9	Q2210 1000 6	1122 1223 14	---- ---- -	3333 2112 18
13	1100 0002 4	Q1100 0000 2	Q0000 0010 1	0001 1111 5	---- ---- -	1212 12-1 -
14	D1-13 2343 -	2010 1102 7	1000 0111 4	2233 21-1 -	---- ---- -	1112 1221 11
15	5422 0112 17	3432 2211 18	2100 0111 6	-1-- 2100 -	---- ---- -	0111 1112 8
16	22-- ---- -	3333 1012 16	2100 0110 5	0011 1010 4	---- ---- -	1101 1112 8
17	---- ---- -	2100 0011 5	0000 0102 3	Q1101 0-1- -	---- ---- -	D3443 3333 26
18	Q---- ---- -	2100 0000 3	3200 1100 7	-334 3233 -	---- ---- -	D3332 3233 22
19	Q---- ---- -	0000 1100 2	1211 0100 6	D3323 3233 22	---- ---- -	3322 2223 19
20	D---- ---- -	1010 0001 3	0102 2235 15	3332 122- -	D---- ---- -	D3322 2432 21
21	---- -13- -	3101 0001 6	3221 2123 16	---- ---- -	D---- ---- -	D3222 1331 17
22	---- ---- -	0101 1110 5	4232 2242 21	---- ---- -	---- ---- -	2212 2233 17
23	---- ---- -	Q0001 1000 2	D4442 2114 22	---- ---- -	D---- ---- -	2111 1222 12
24	Q---- ---- -	Q0200 1000 3	3332 2212 18	---- ---- -	D---- ---- -	1111 0112 8
25	Q---- ---- -	3112 2121 13	3111 0132 12	D---- ---- -	D---- ---- -	Q0010 0111 4
26	---- ---- -	2211 223- -	2201 0110 7	D---- ---- -	---- ---- -	1011 2-12 -
27	---- -1-- -	D--4- 2034 -	D1103 1444 18	D---- ---- -	---- ---- -	2221 1-32 -
28	---- ---- -	3224 2112 17	D3342 1235 23	---- ---- -	---- ---- -	3211 1111 11
29	D343- 2224 -	2110 1111 8	D4433 3134 25	---- ---- -	---- ---- -	1011 1112 8
30	3431 1111 15	3210 1-11 -	3232 1222 17	---- ---- -	---- ---- -	2-12 -2-- -
31	0--- -1-- -	12-- --22 -		---- ---- -		1212 ---2 -
Mean K sum	8.4	8.3	12.2	8.8	-	14.3

OCURRENCE DISTRIBUTION OF K INDICES

K index:	0	1	2	3	4	5	6	7	8	9	-
JAN2007	18	65	84	55	16	0	0	0	0	0	10
FEB2007	32	81	67	35	6	1	0	0	0	0	2
MAR2007	49	76	53	40	12	3	0	0	0	0	15
APR2007	69	62	47	31	18	8	0	0	0	0	5
MAY2007	85	59	50	32	11	7	1	0	0	0	3
JUN2007	66	68	40	22	3	0	0	0	0	0	41
JUL2007	34	38	27	10	6	1	0	0	0	0	132
AUG2007	79	74	45	23	6	1	1	0	0	0	19
SEP2007	60	65	58	36	18	2	0	0	0	0	1
OCT2007	49	44	32	25	2	0	0	0	0	0	96
NOV2007	0	0	0	0	0	0	0	0	0	0	240
DEC2007	9	72	57	35	4	0	0	0	0	0	71
2007 TOTAL	550	704	560	344	102	23	2	0	0	0	635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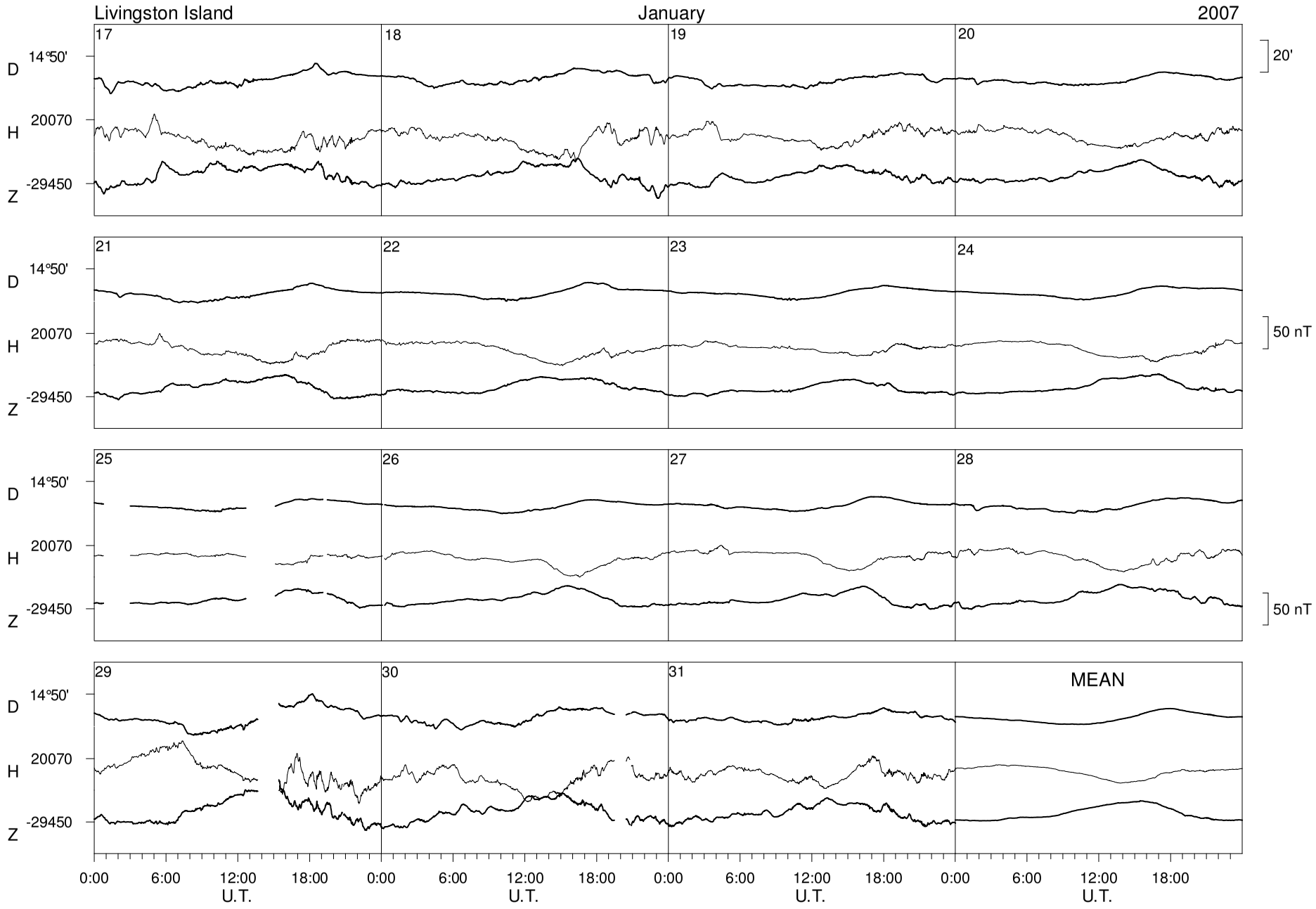
Livingston Island
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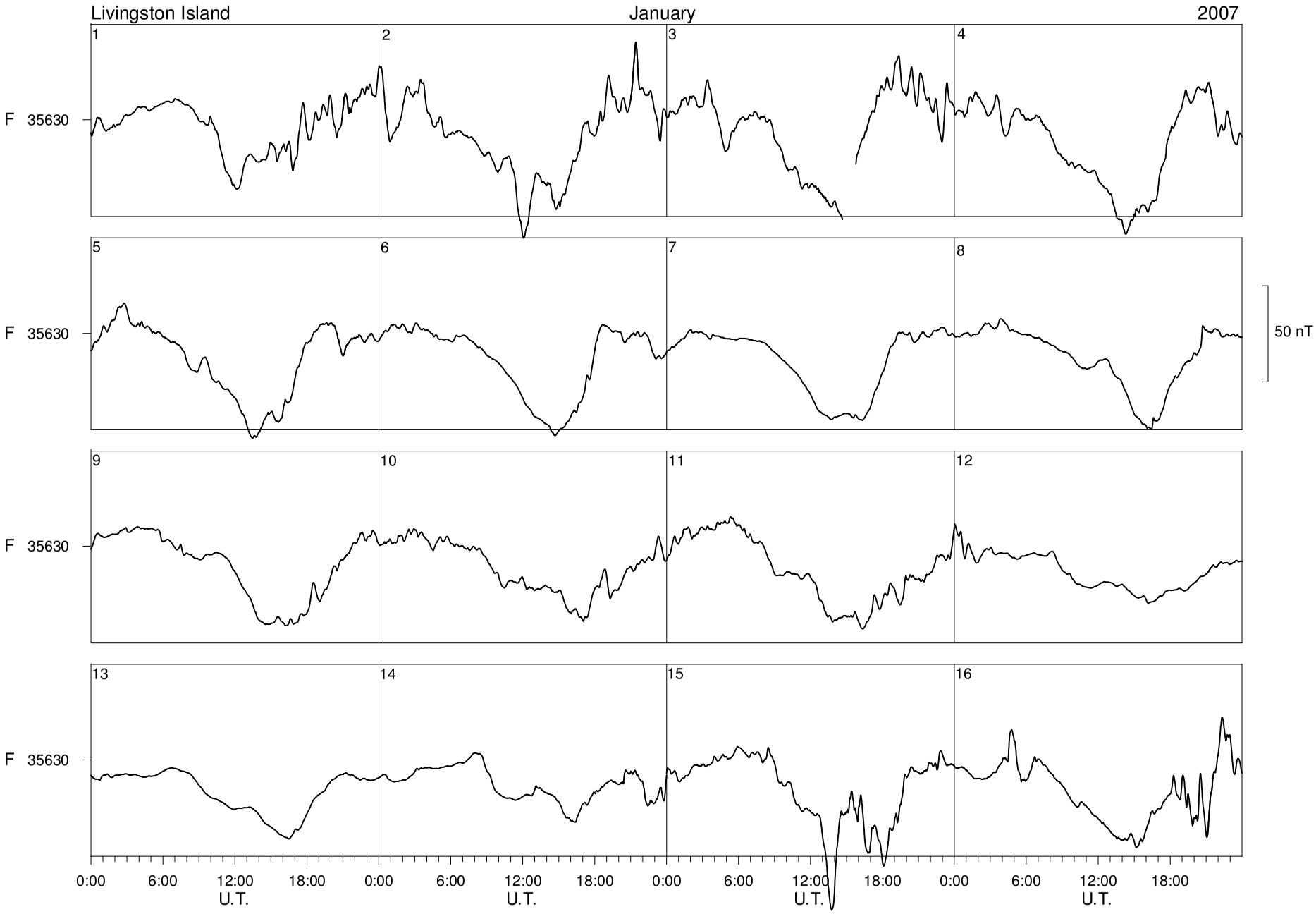
Livingston Island
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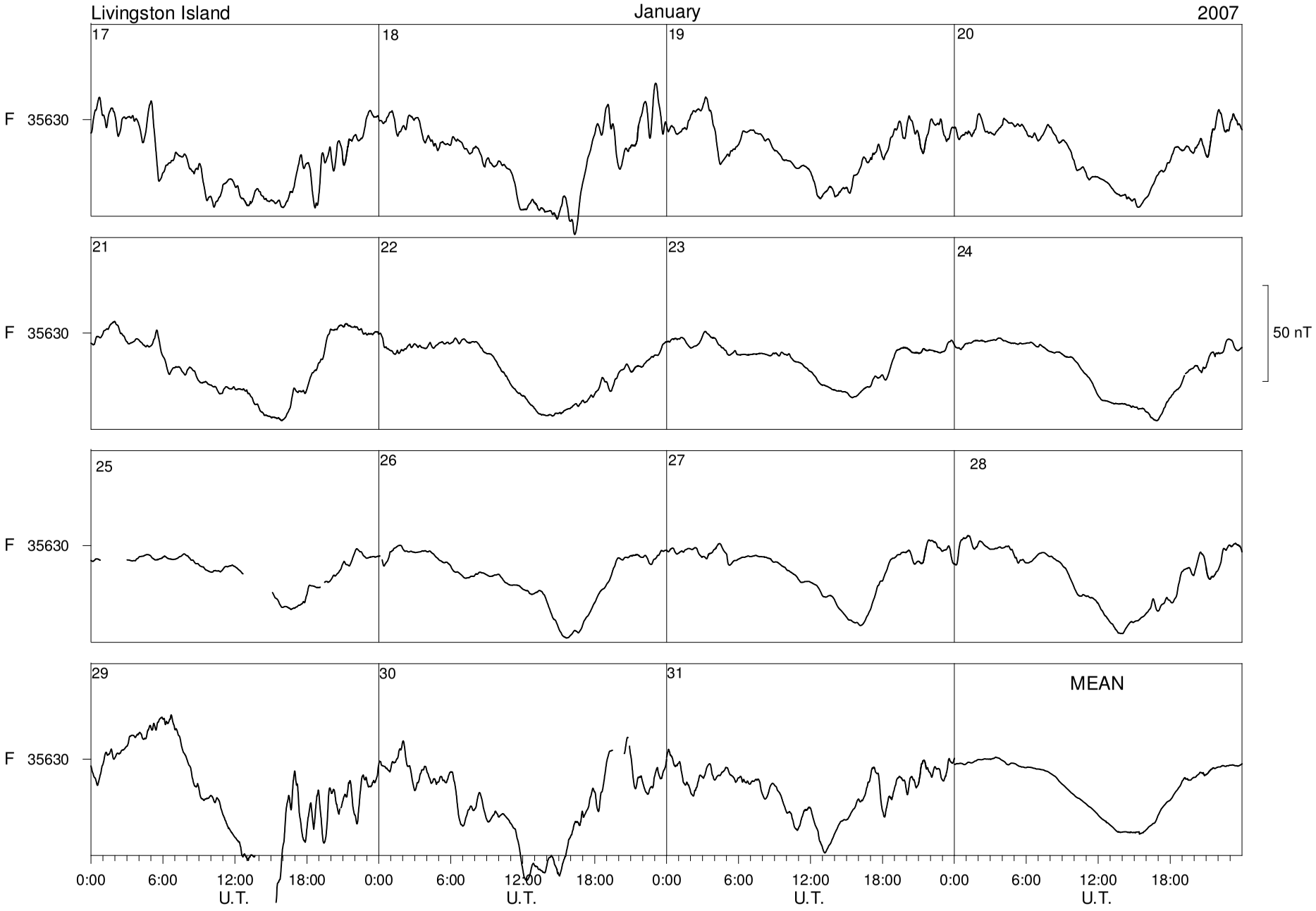
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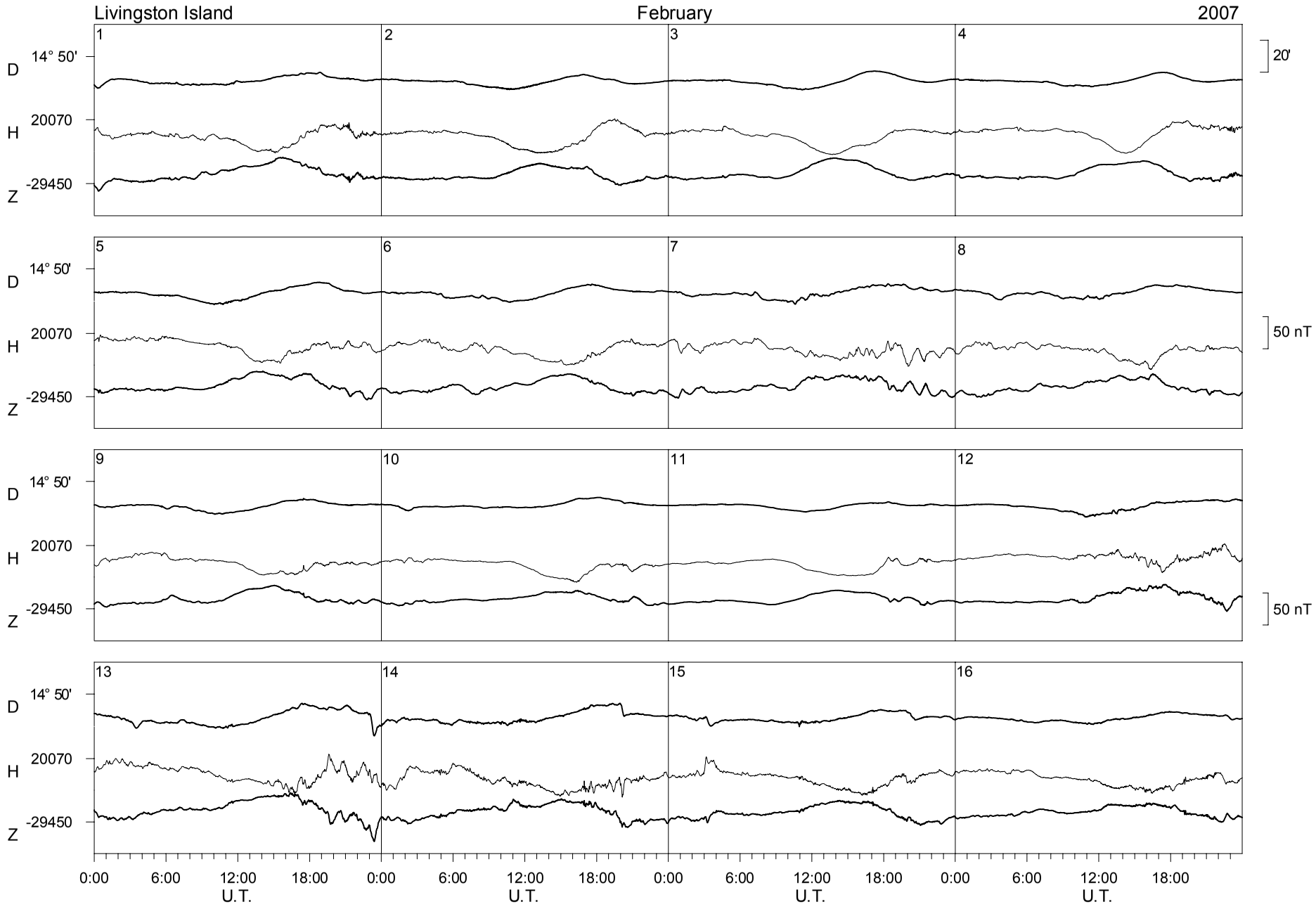
Livingston Island
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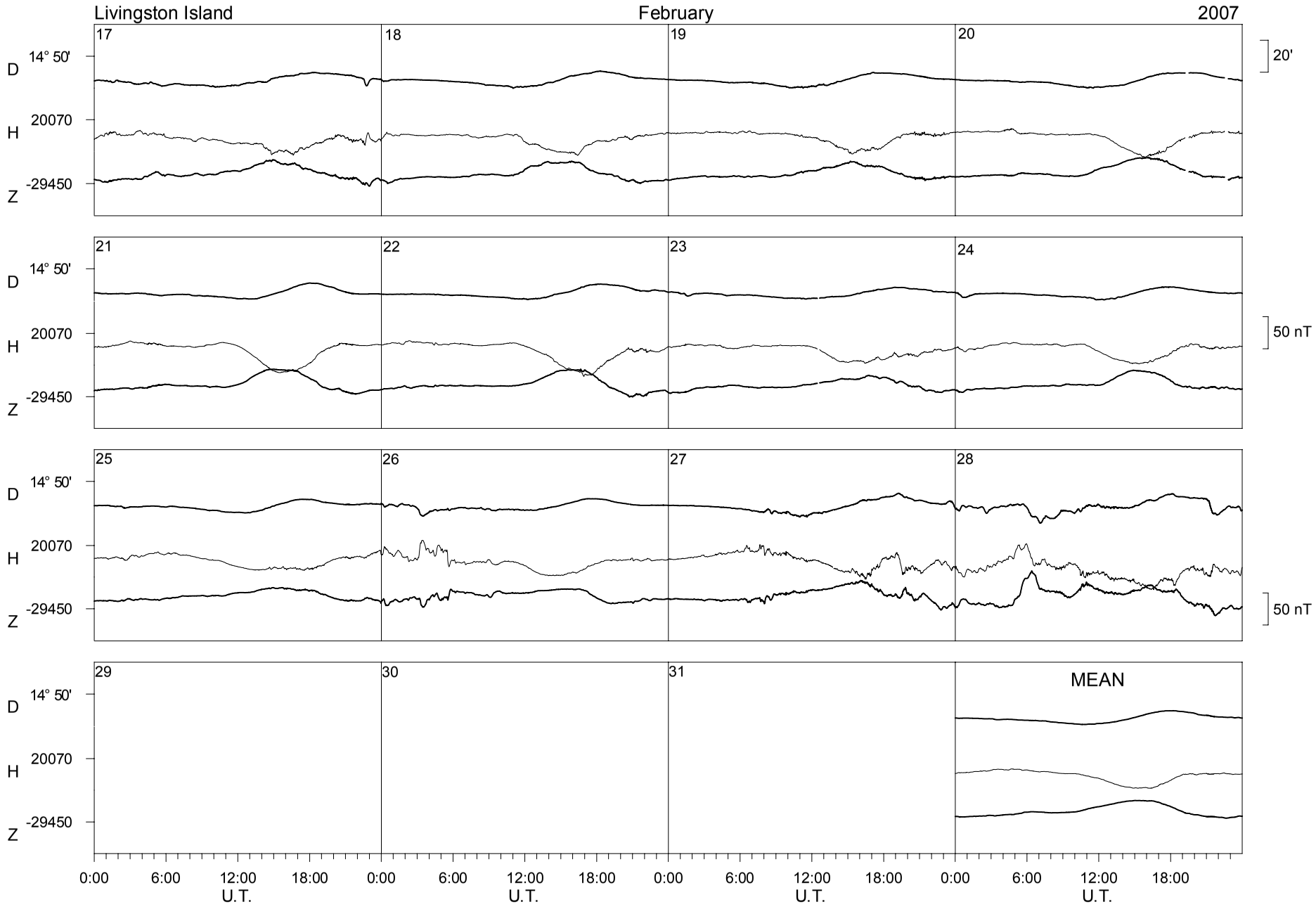
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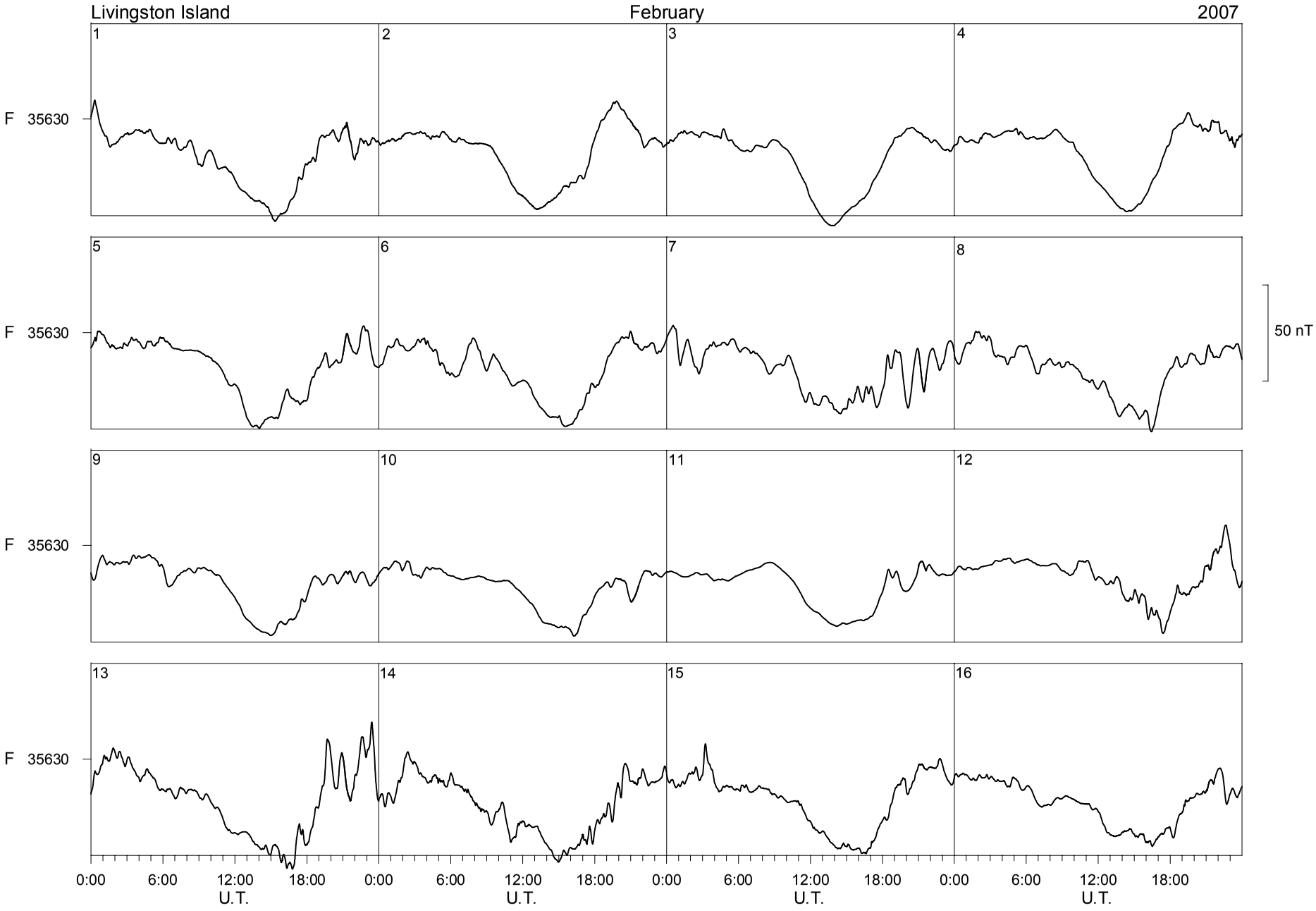
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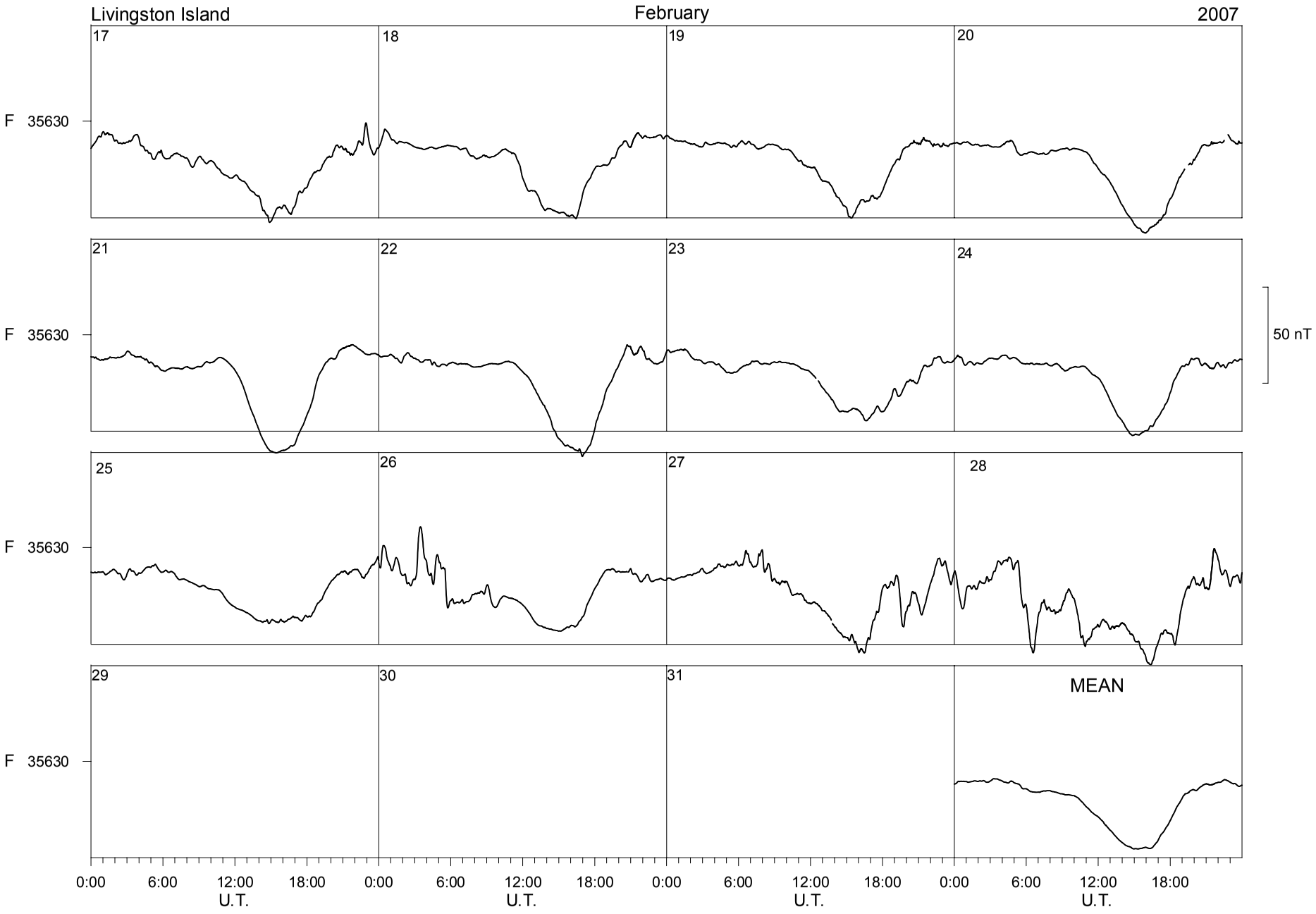
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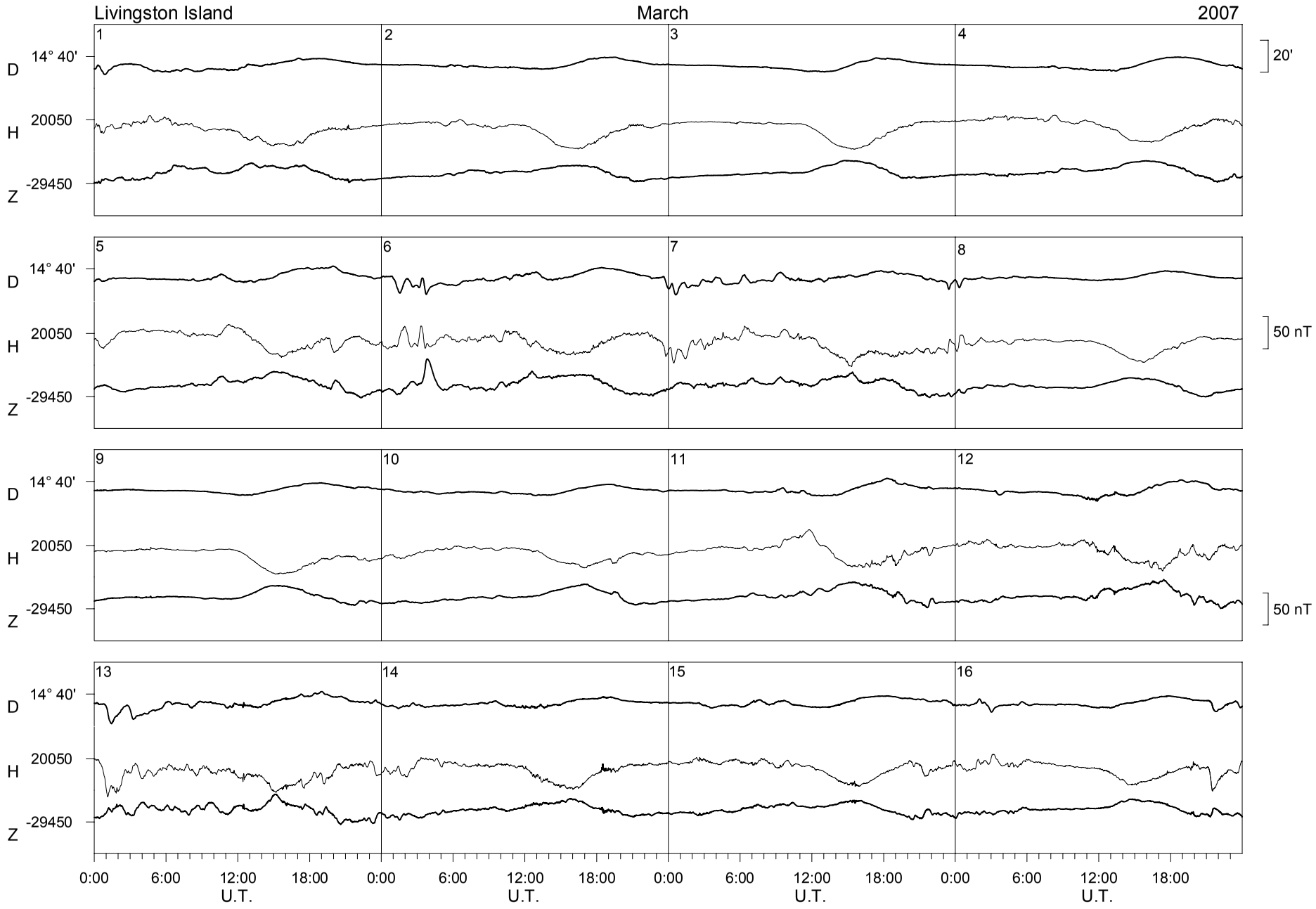
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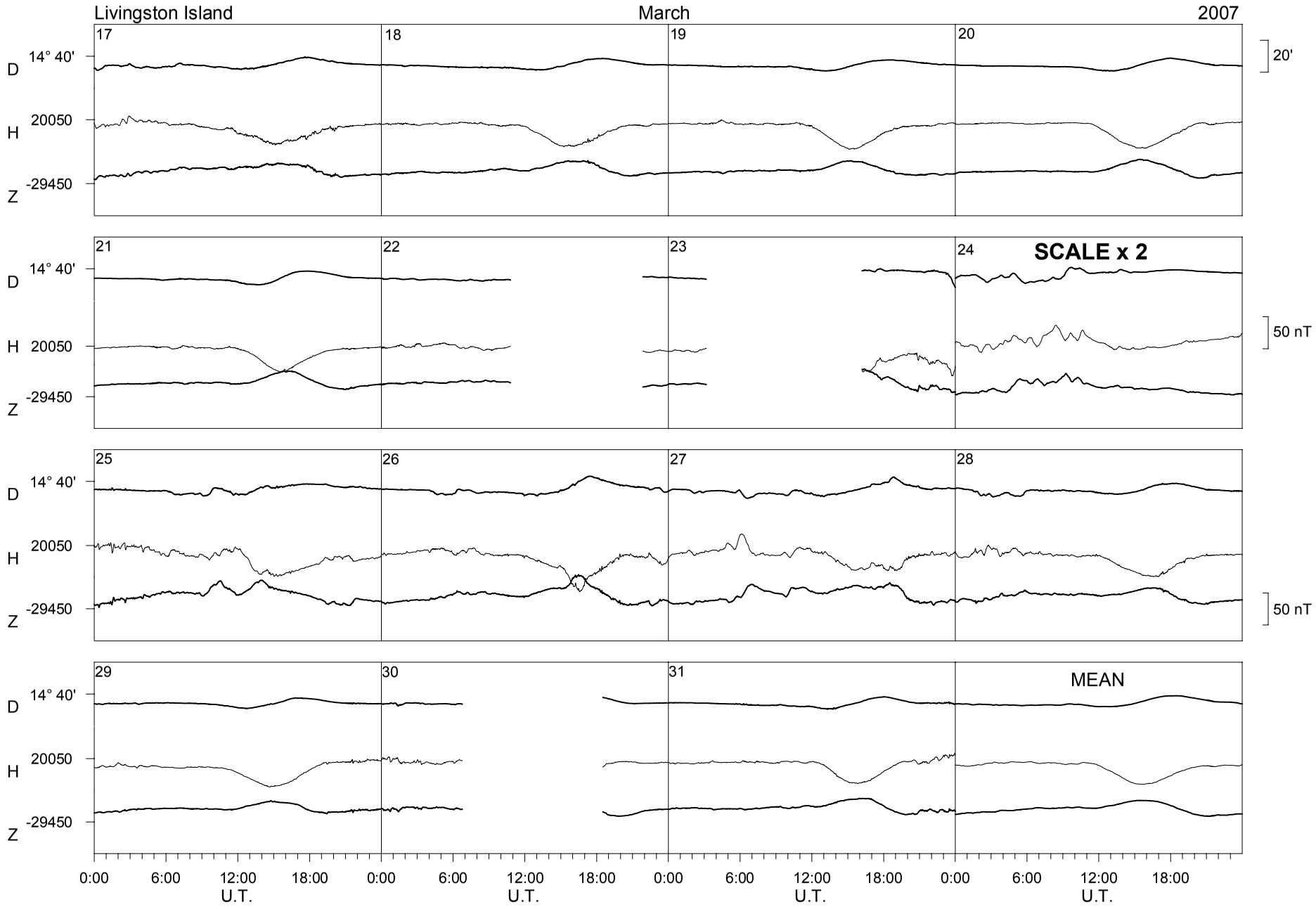
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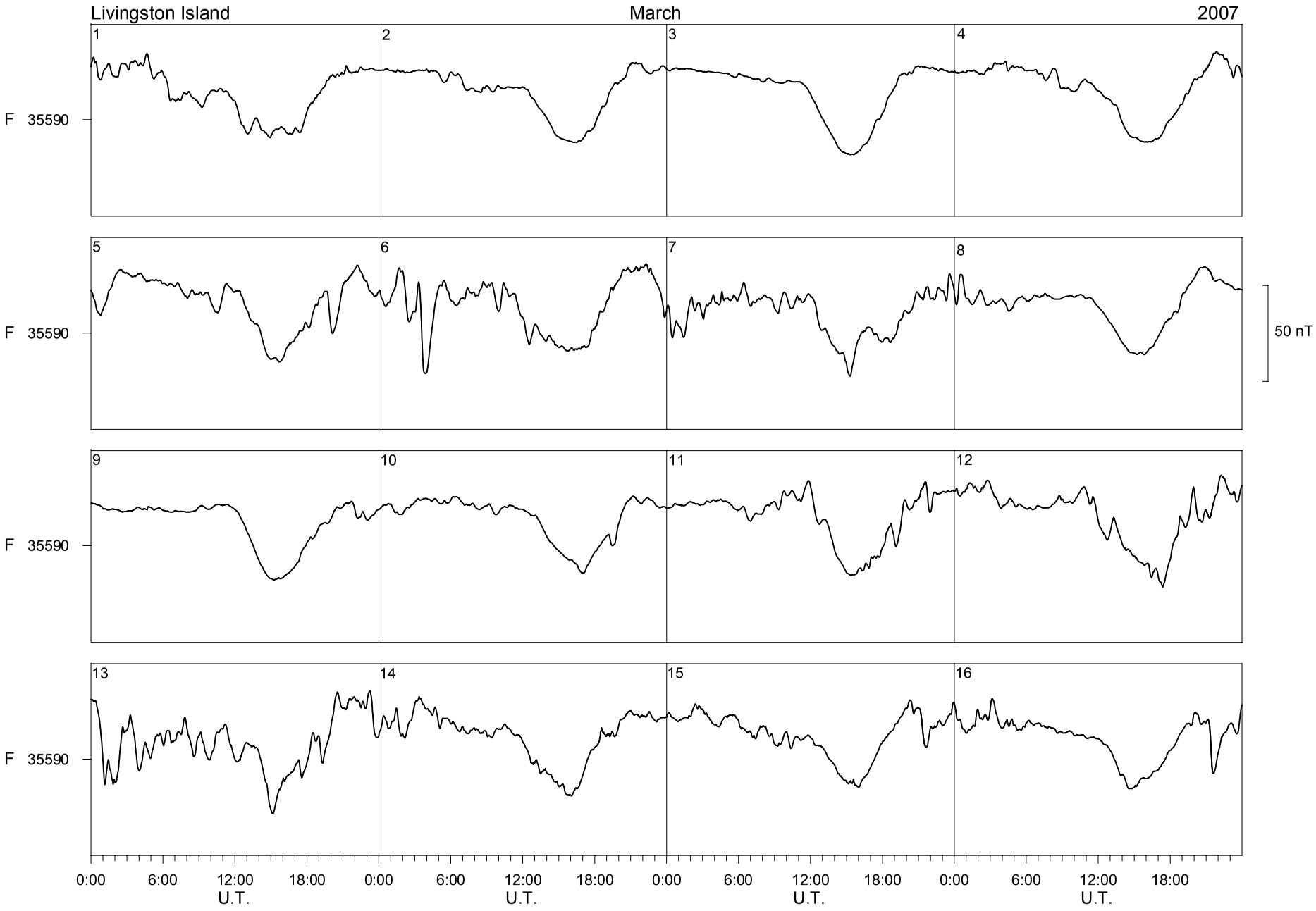
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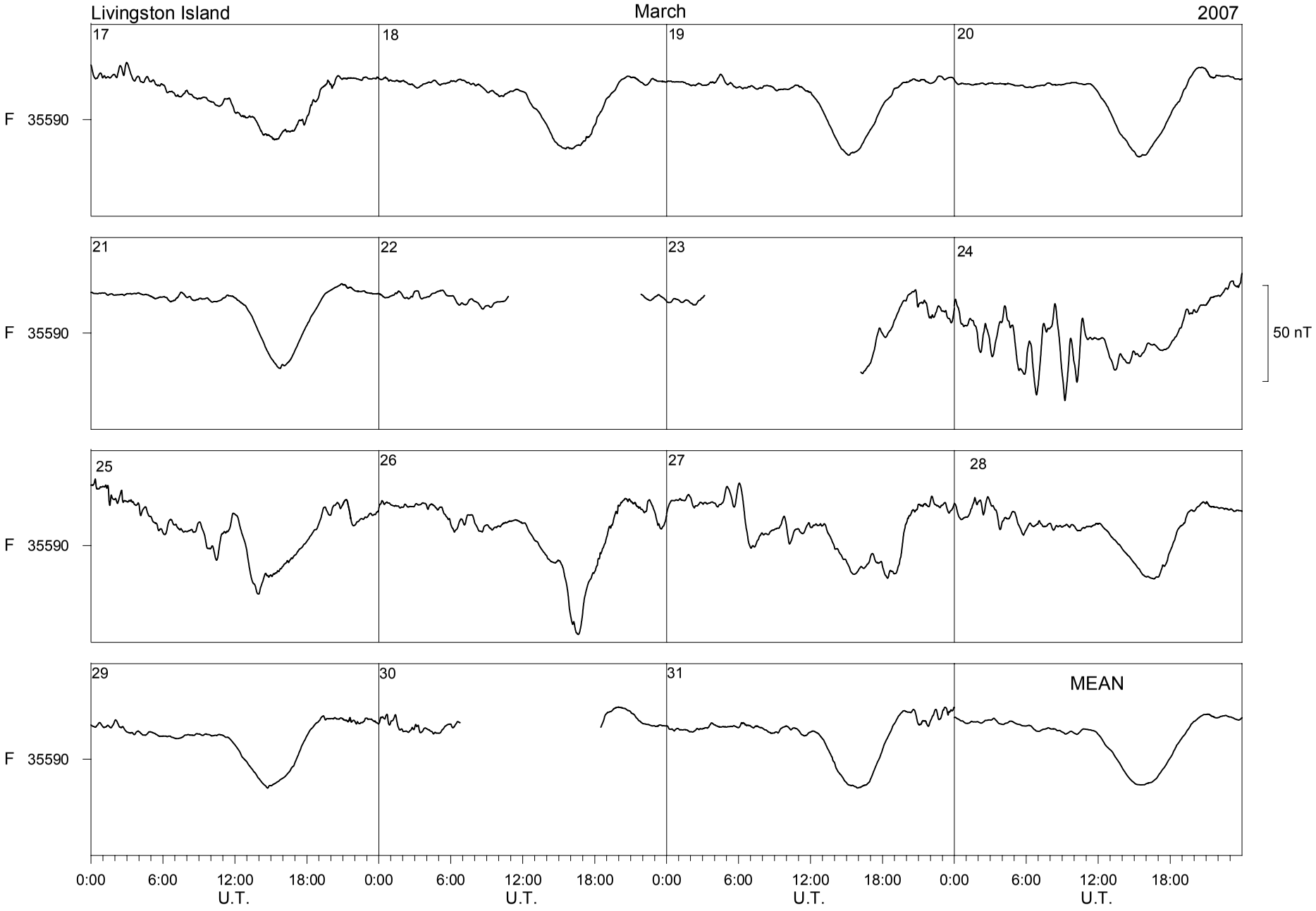
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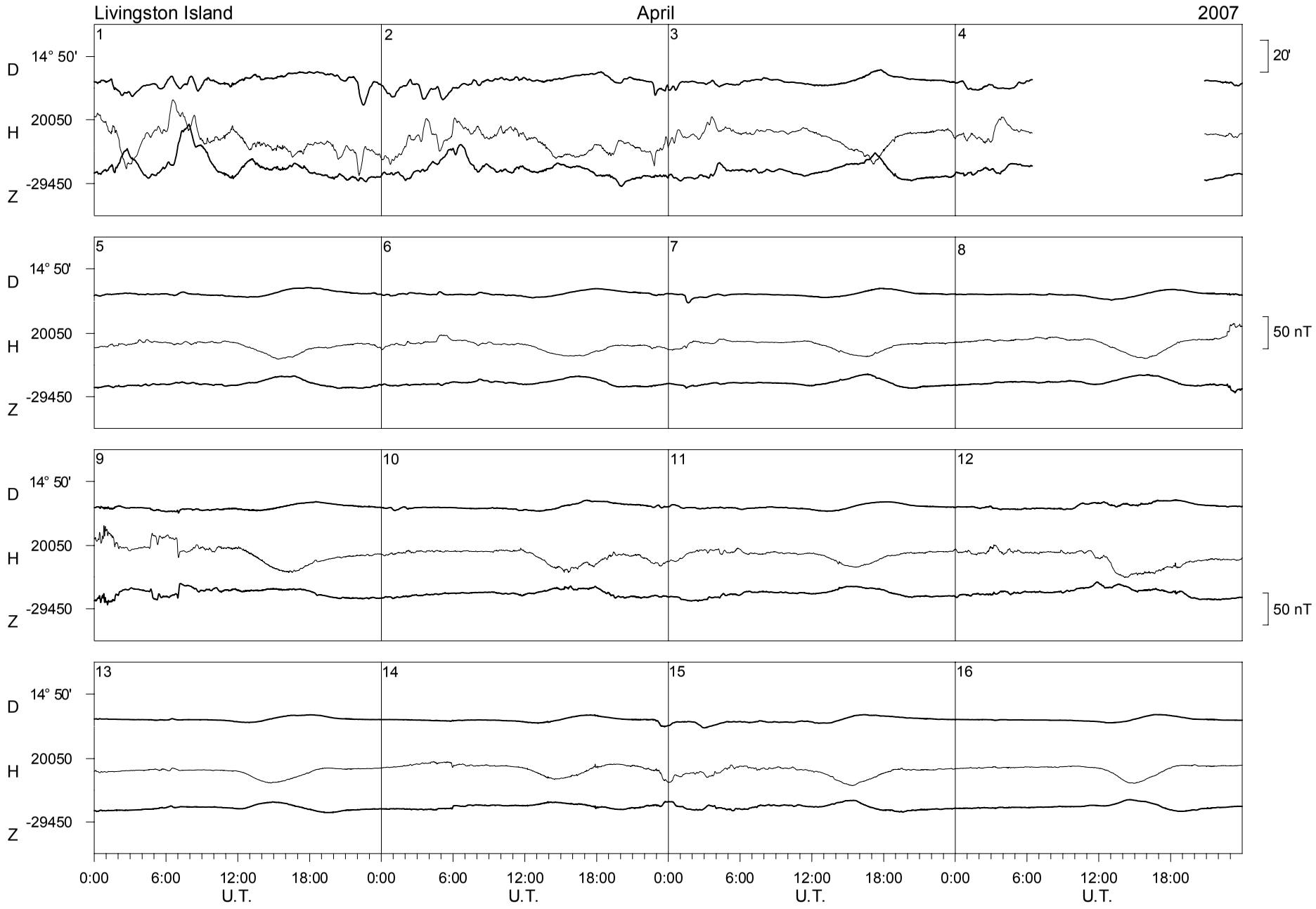
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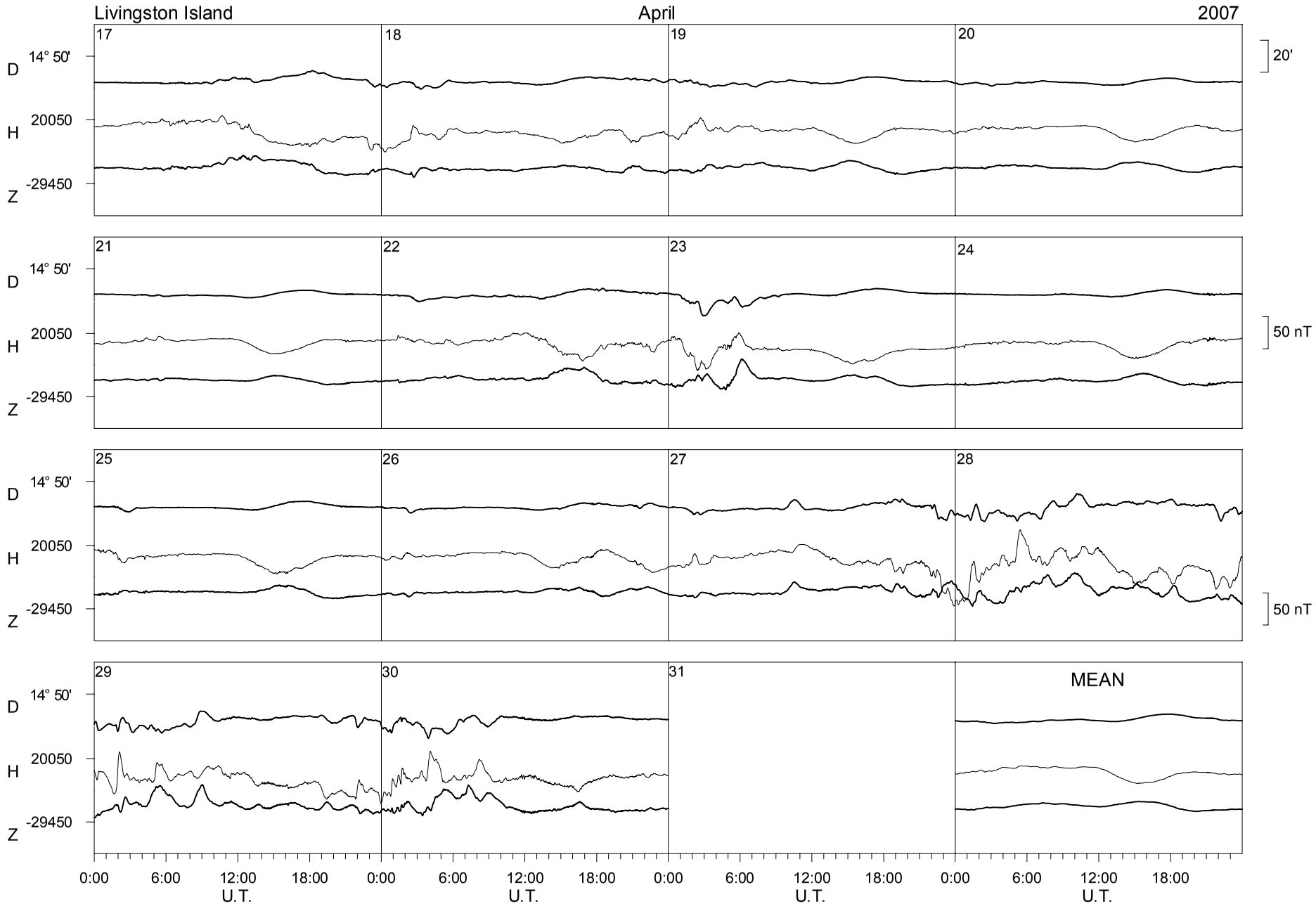
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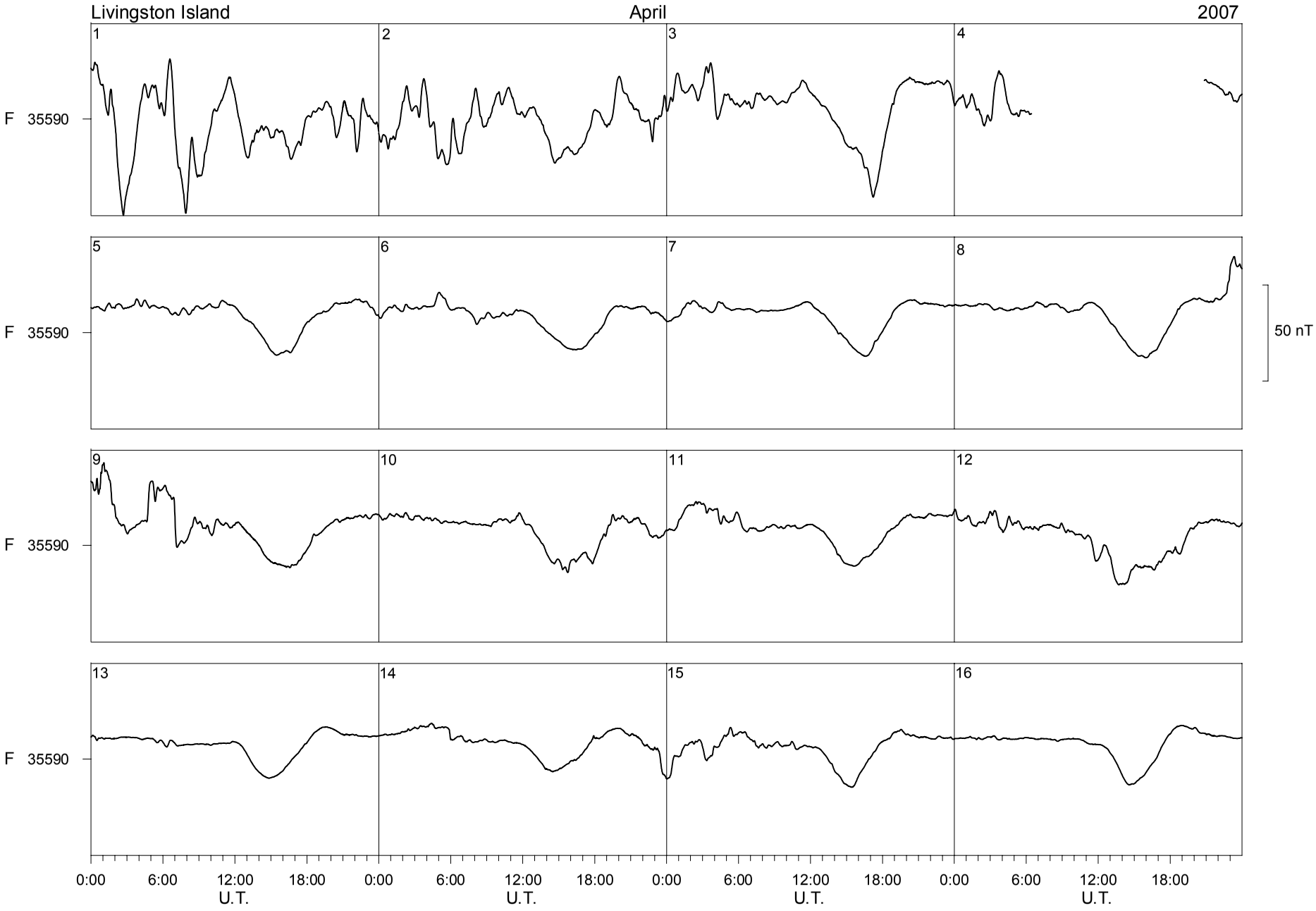
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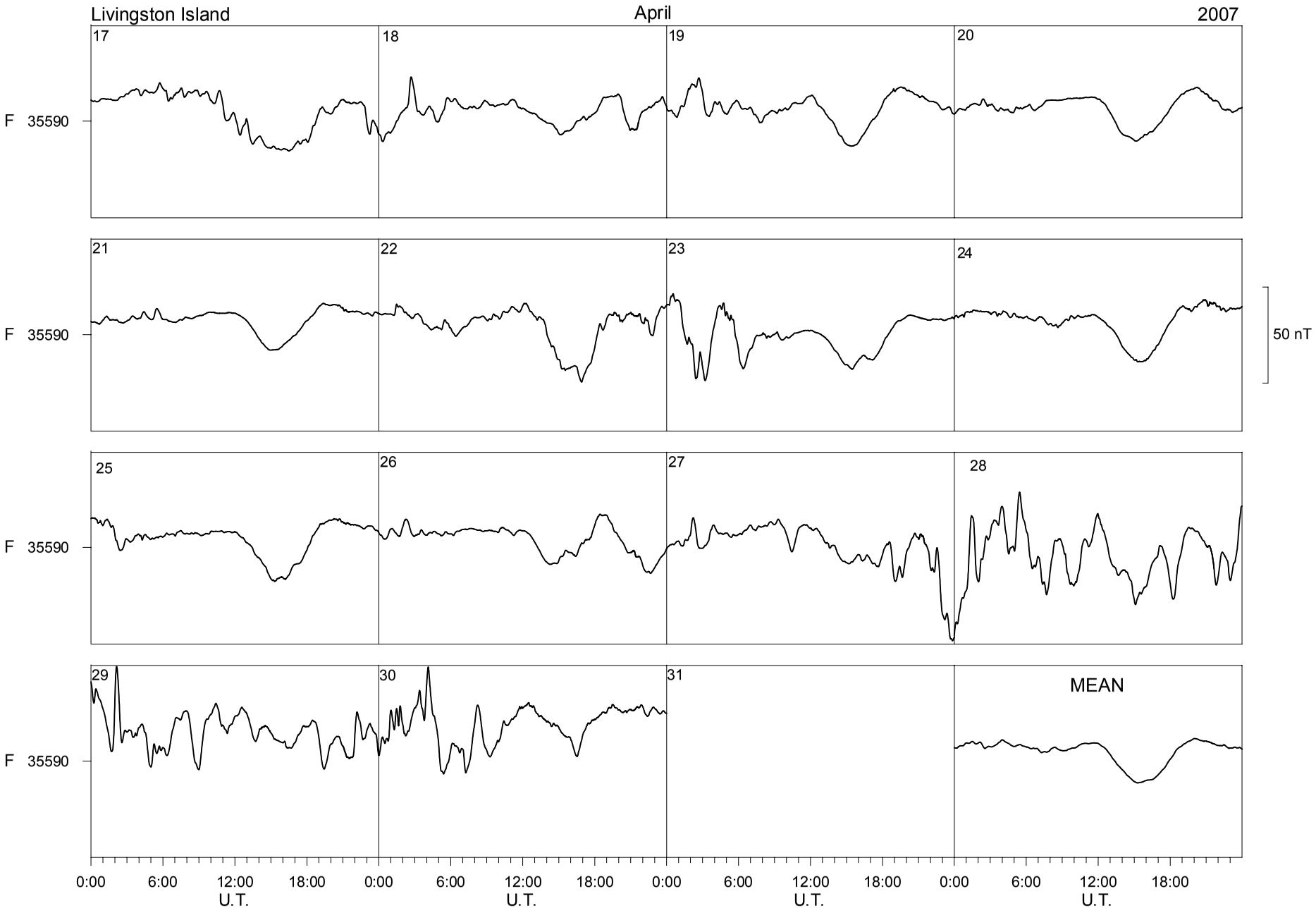
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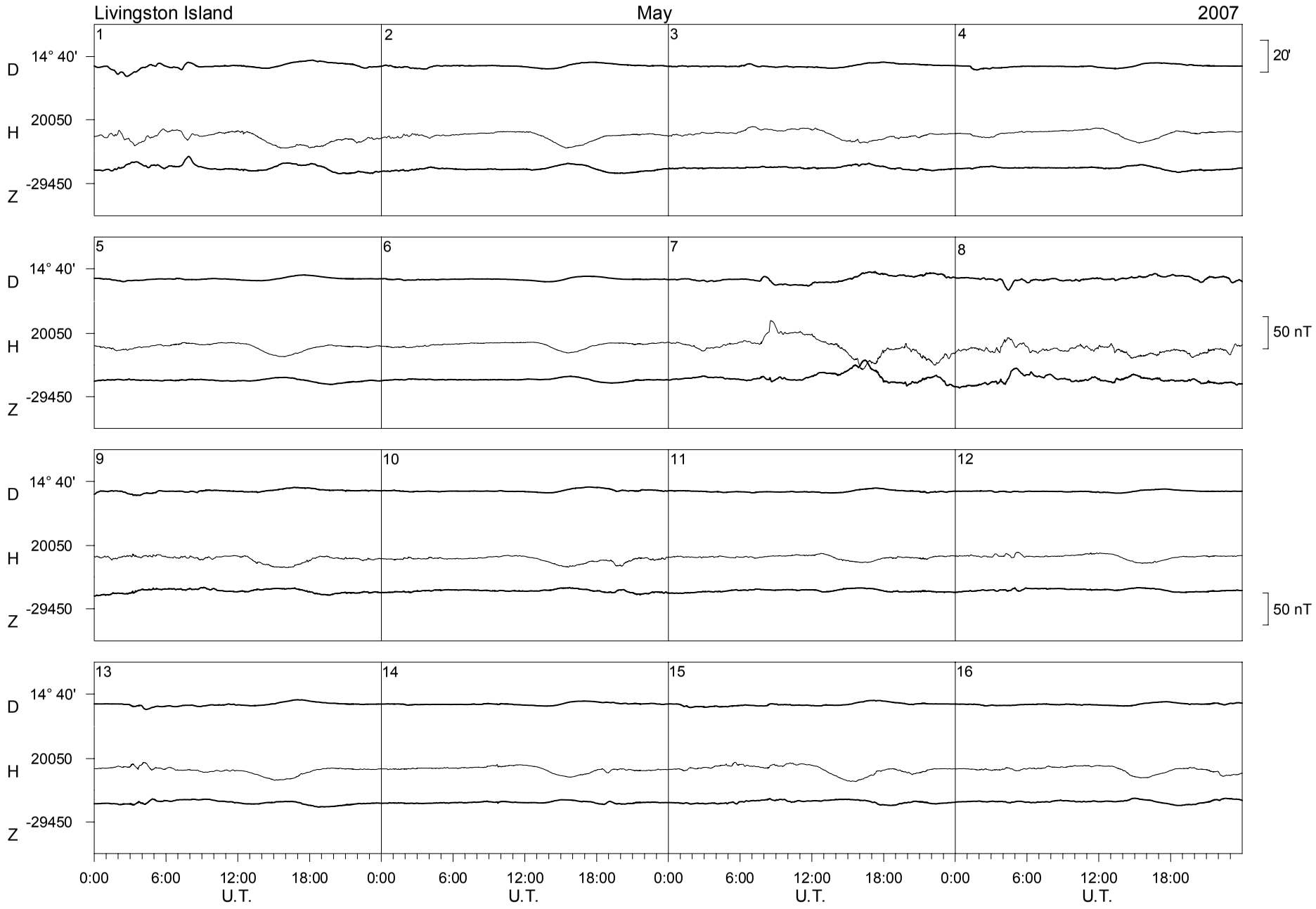
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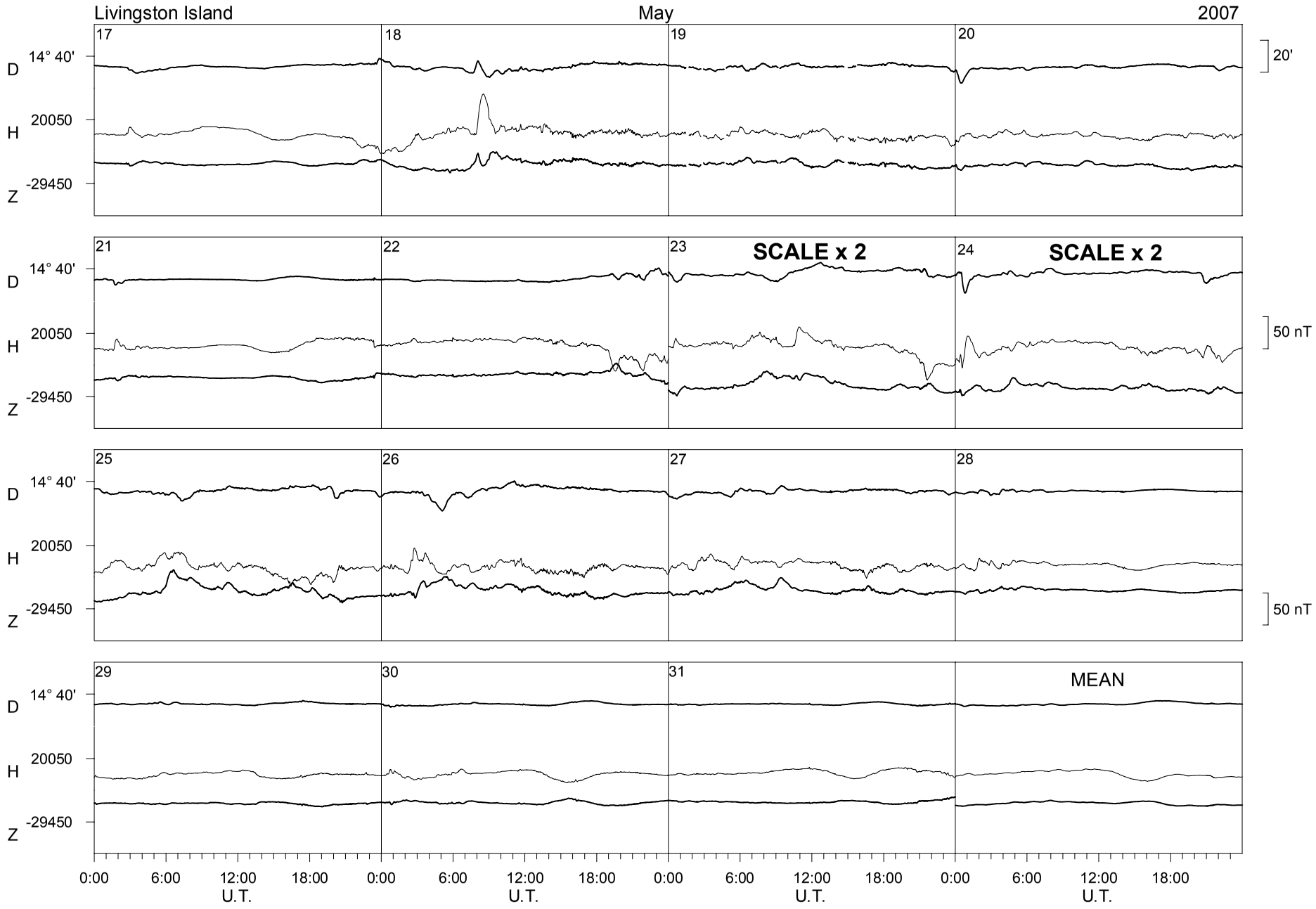
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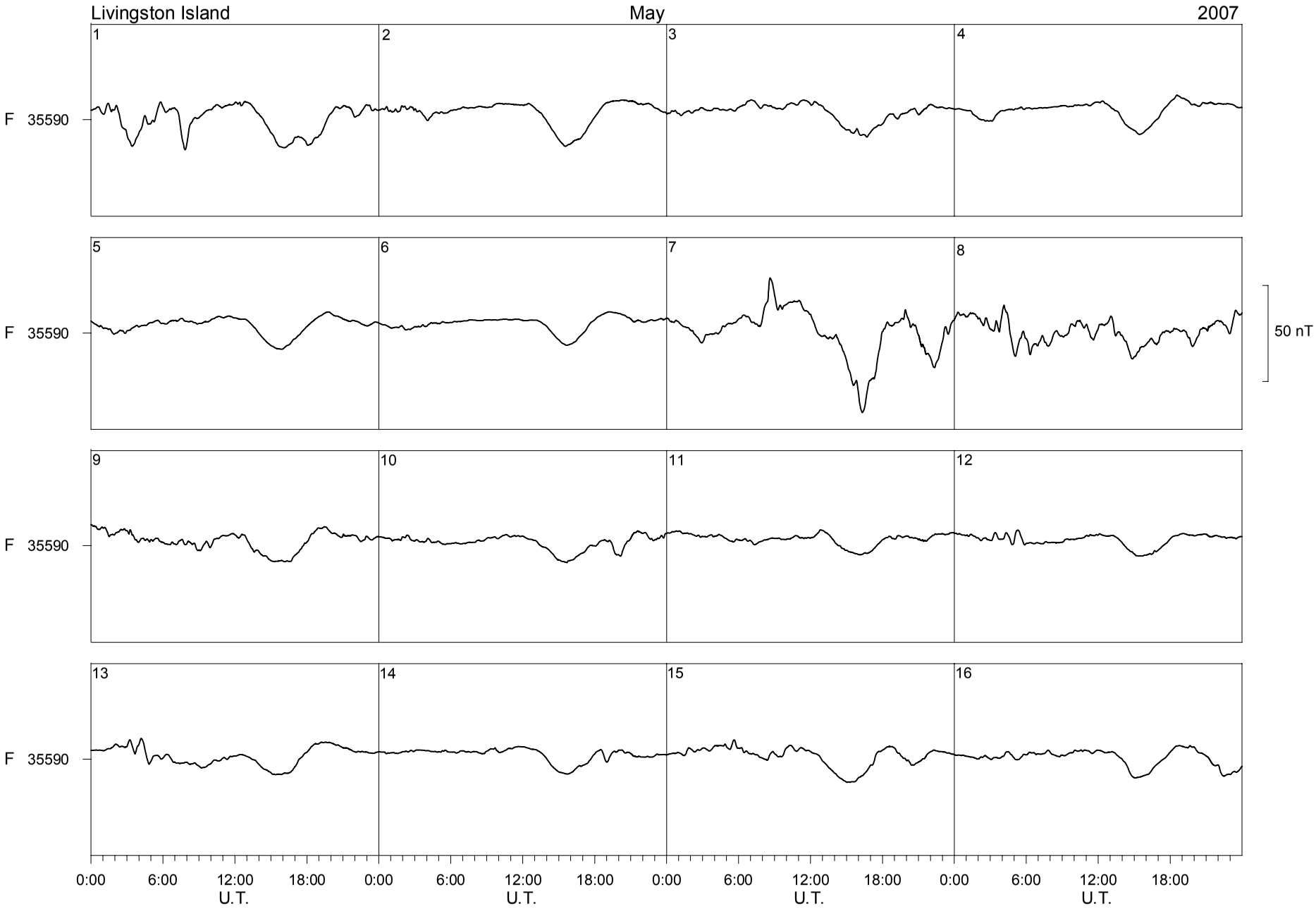
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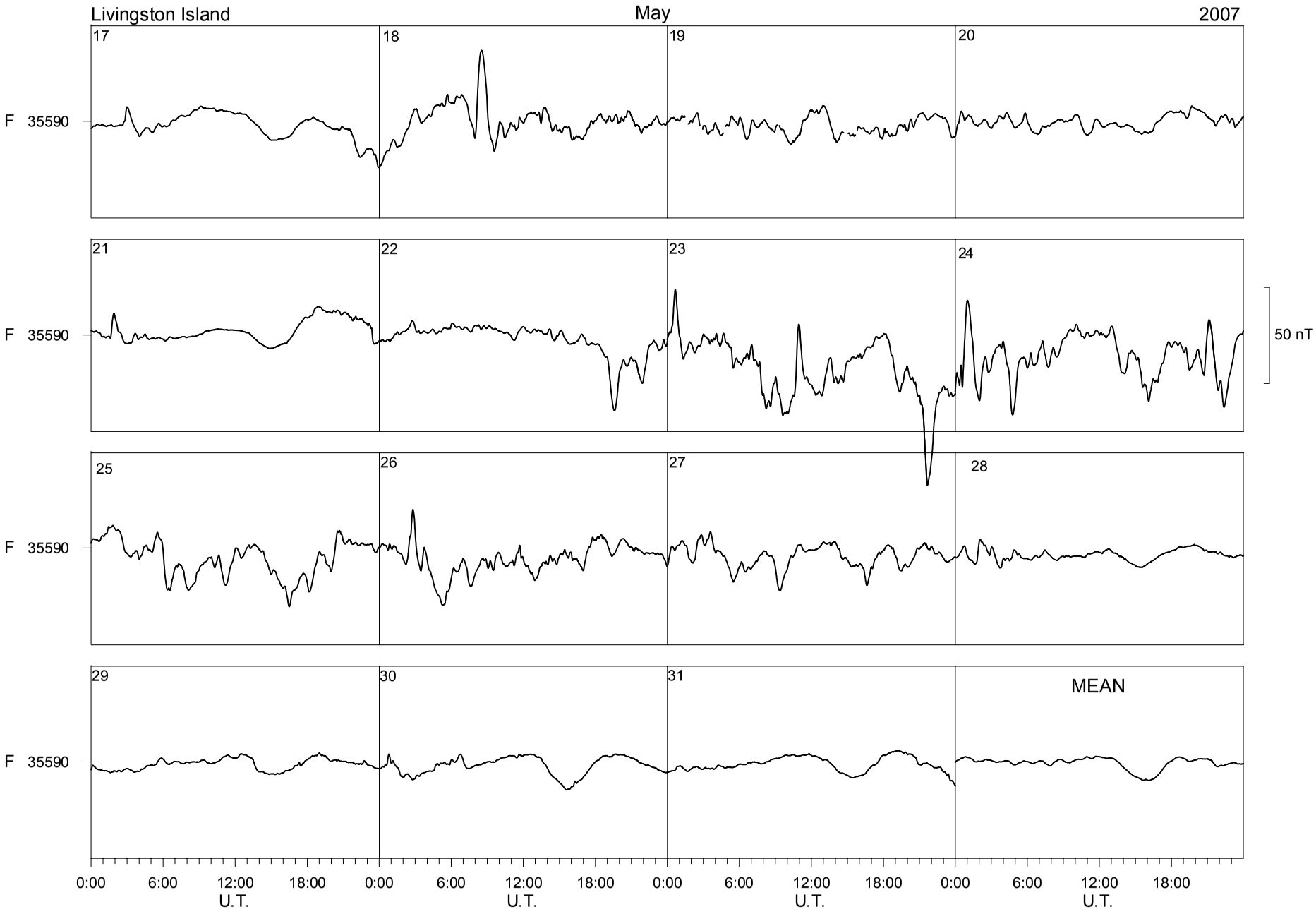
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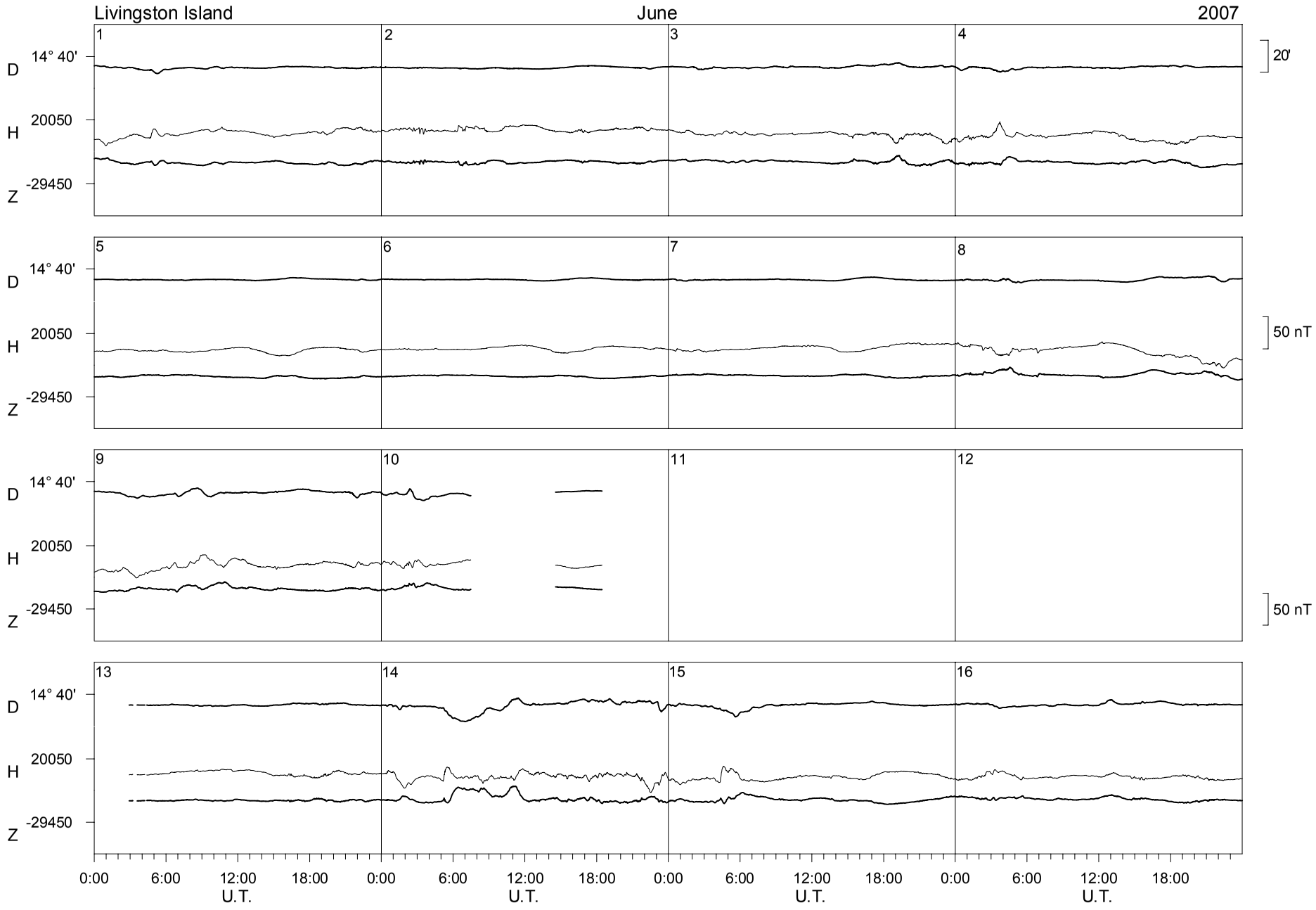
Livingston Island
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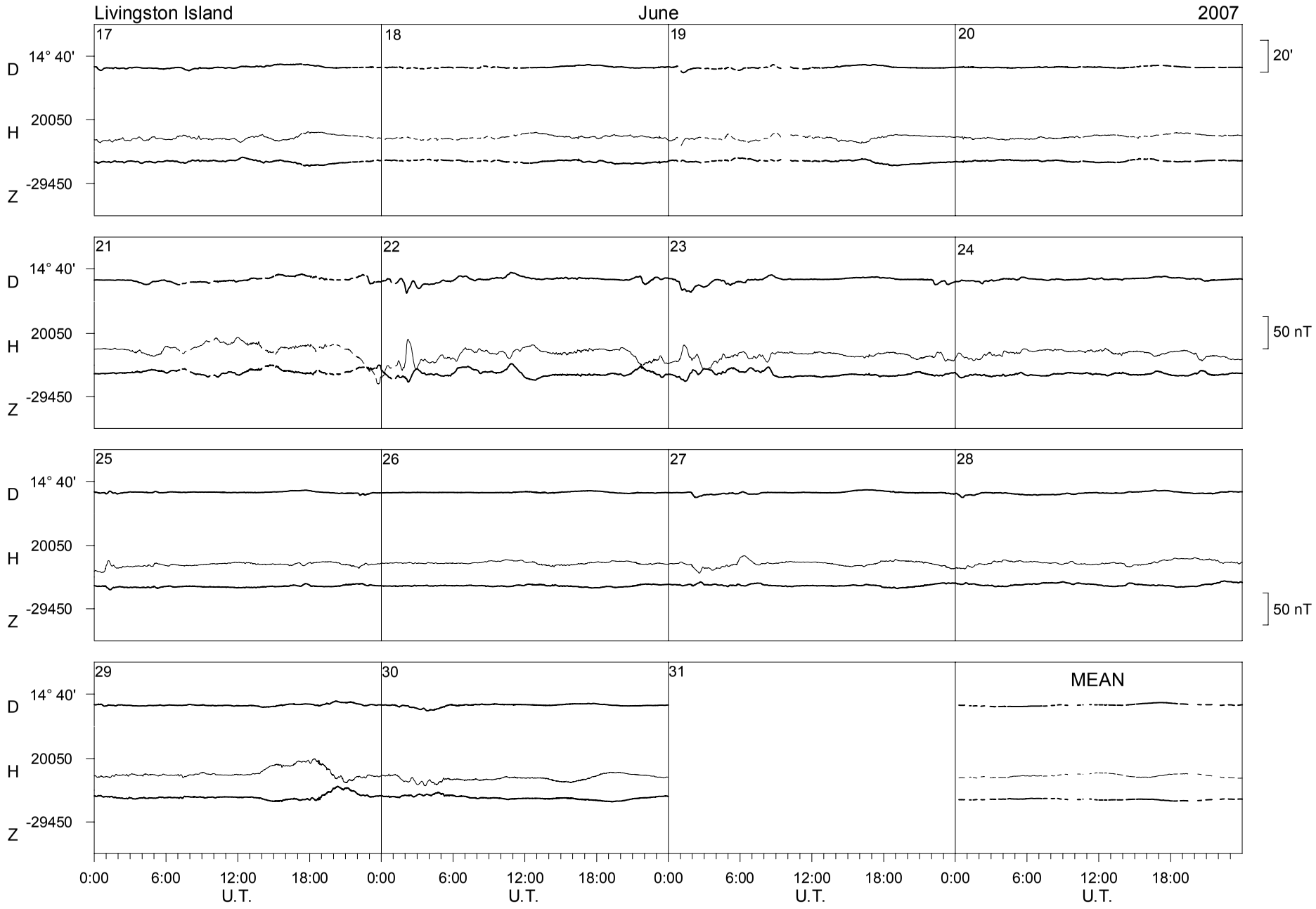
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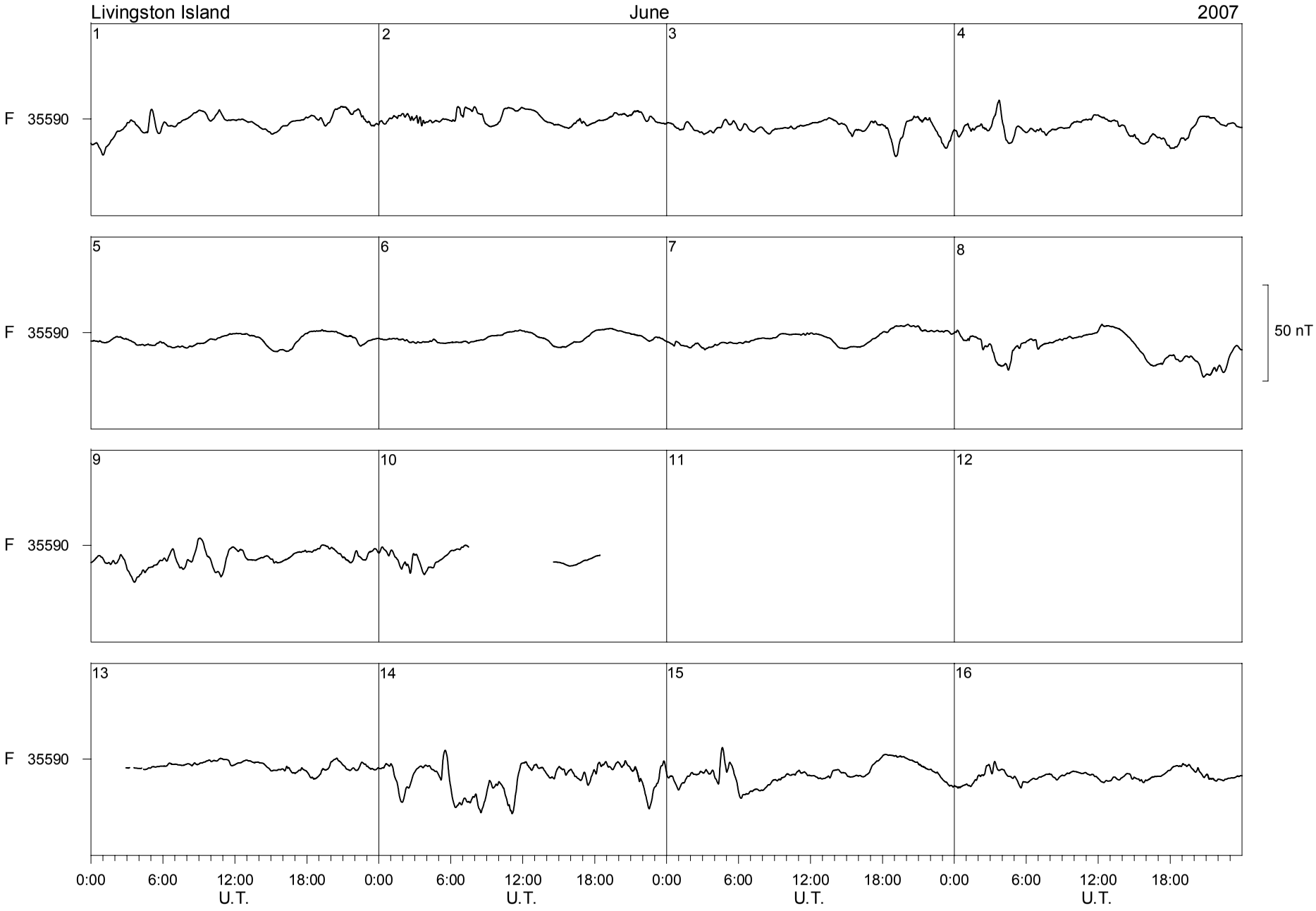
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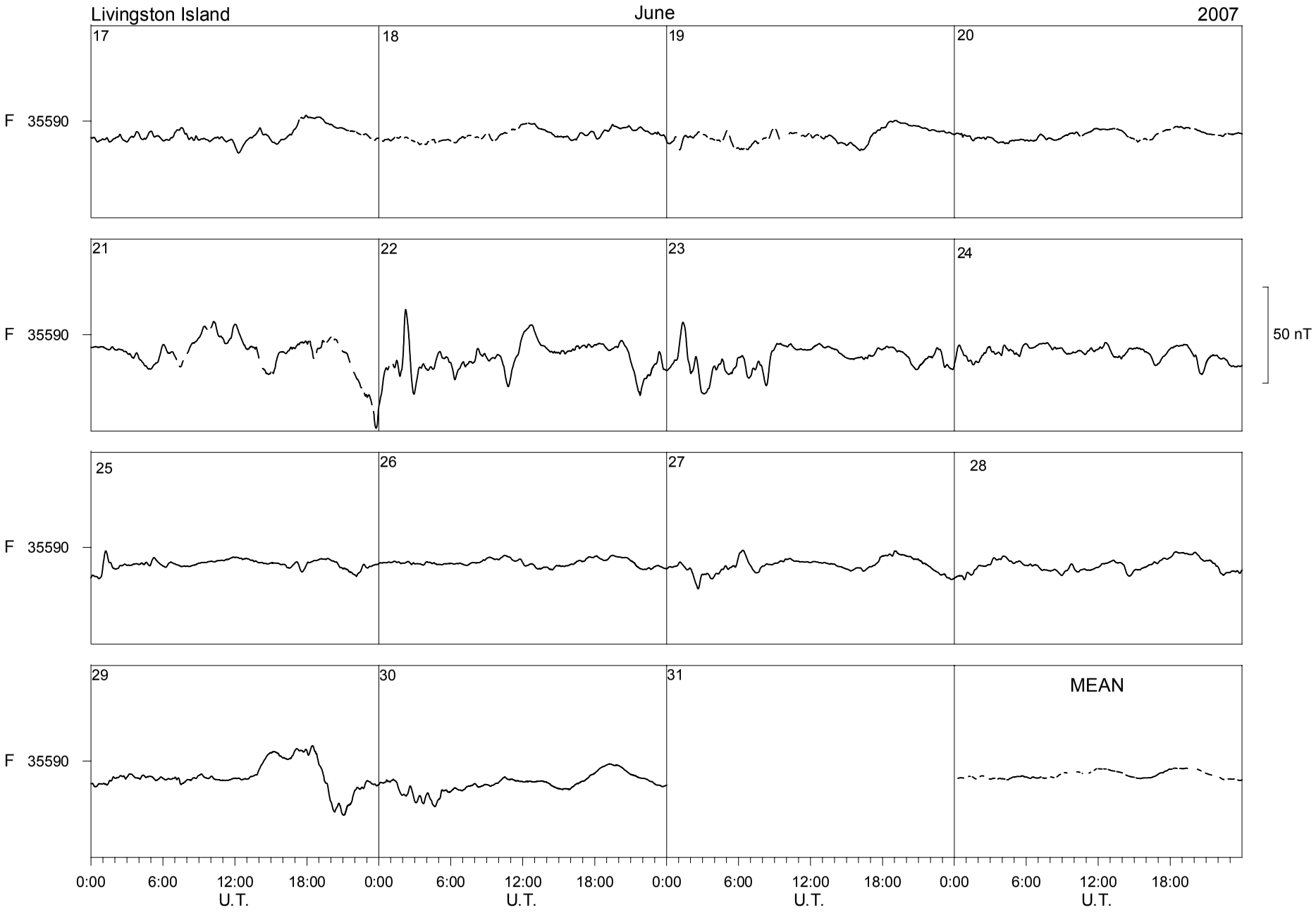
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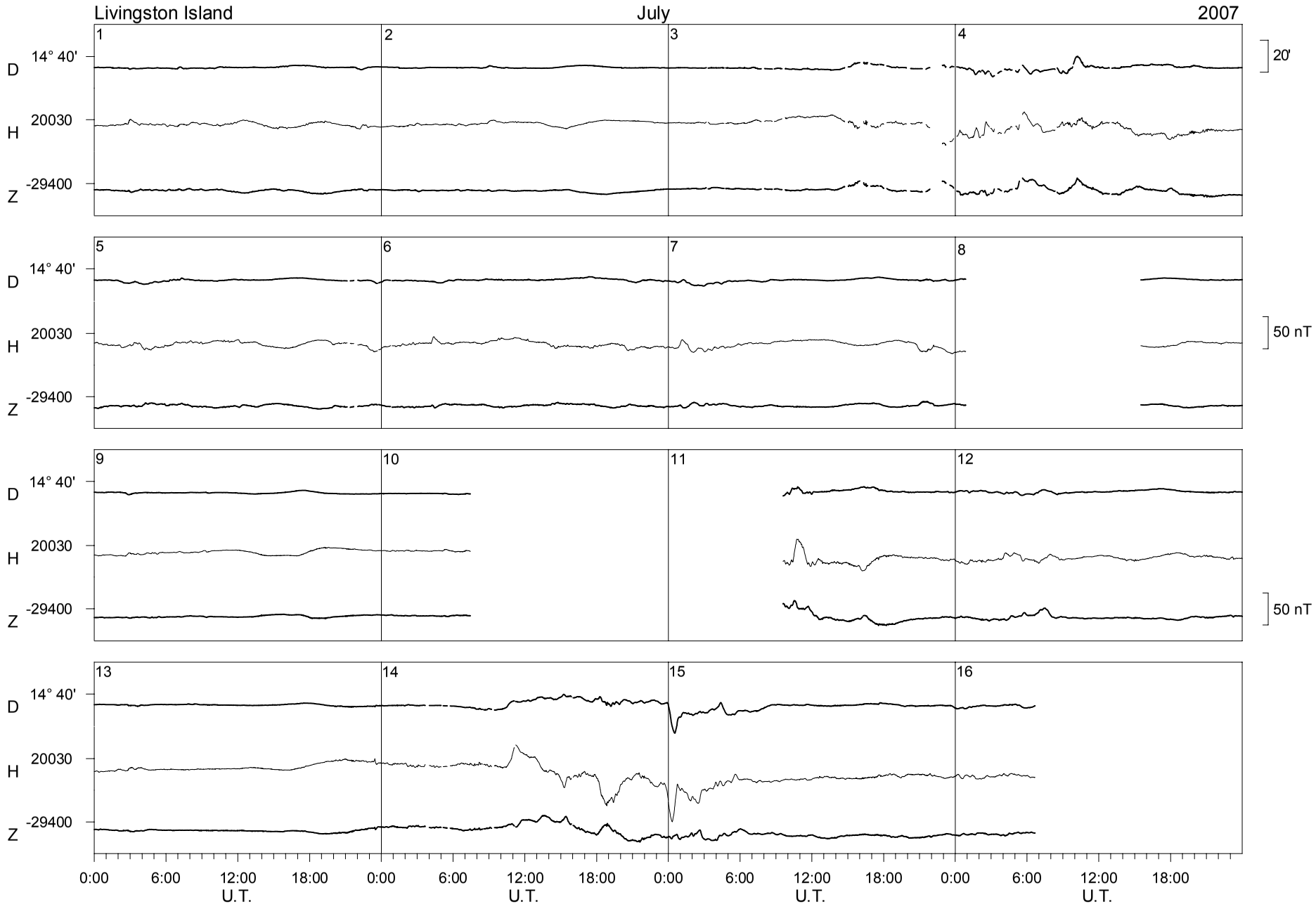
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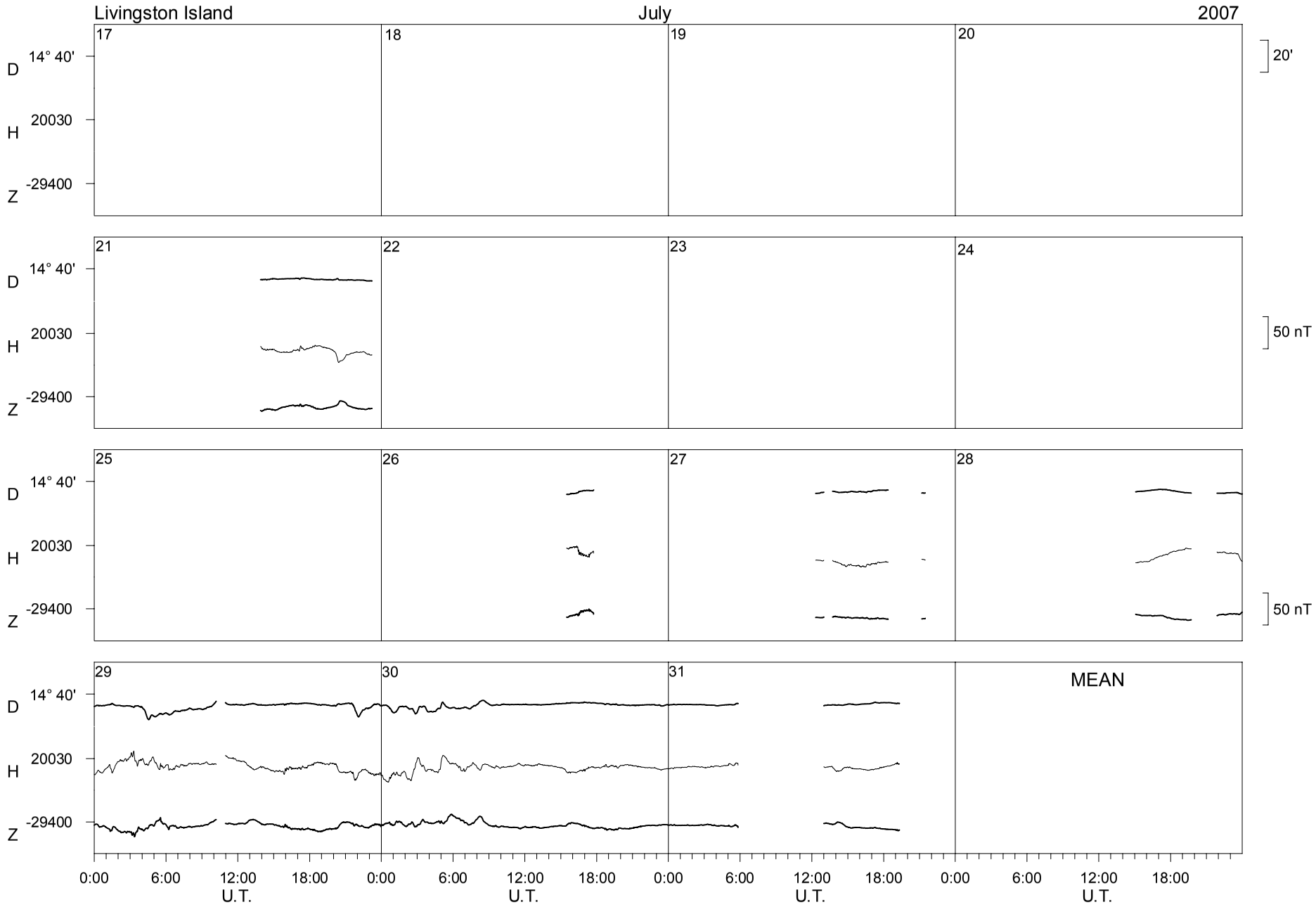
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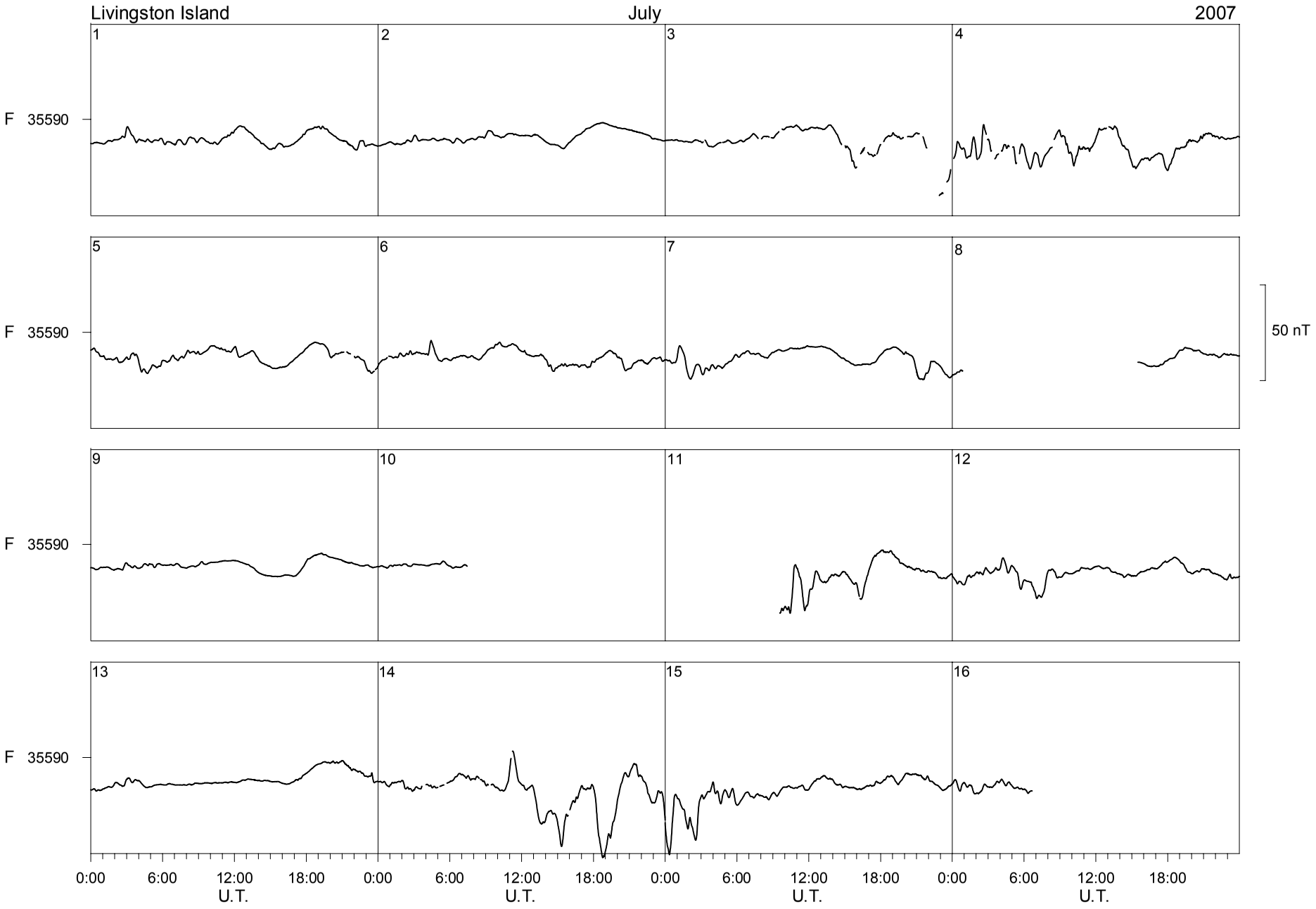
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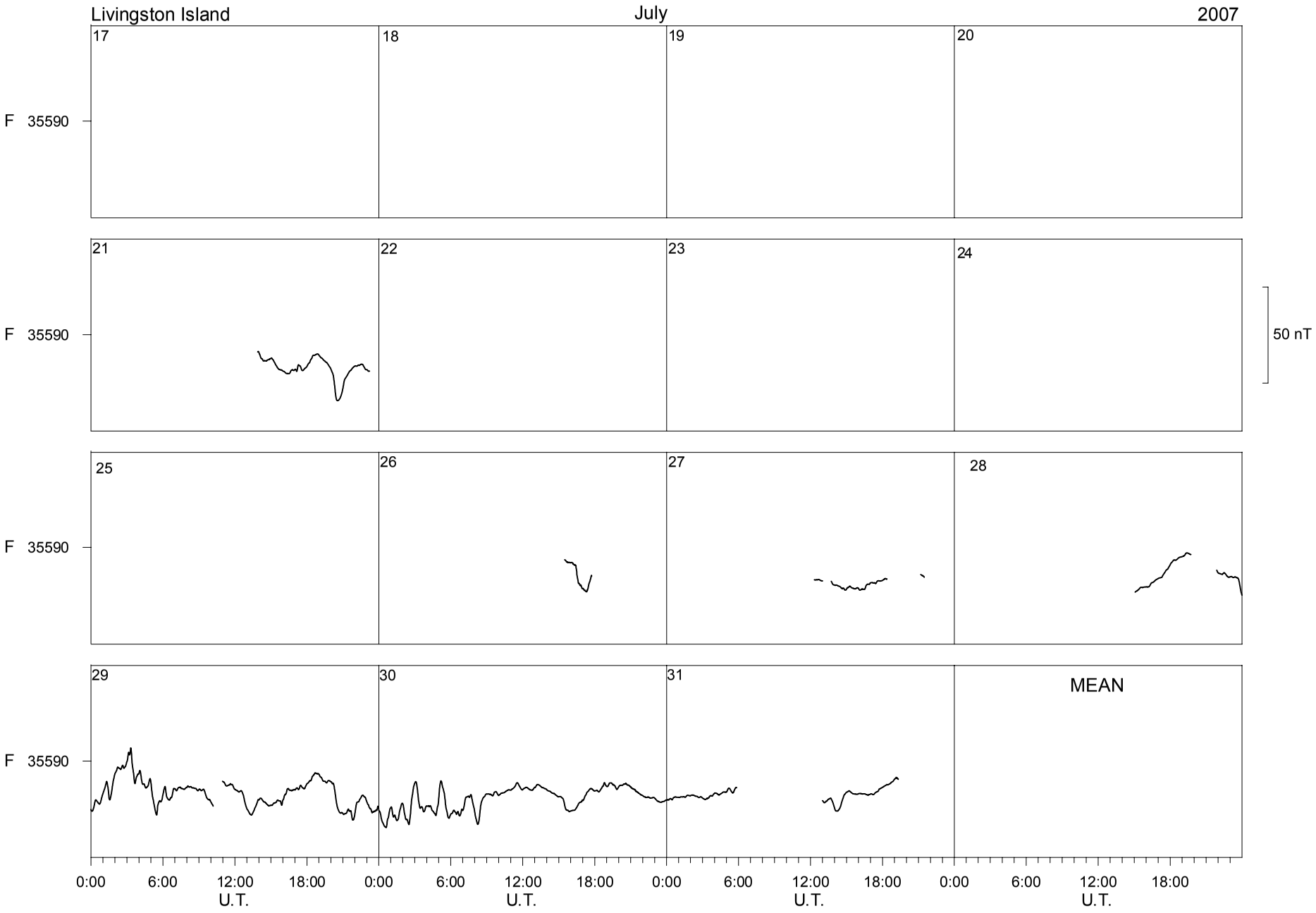
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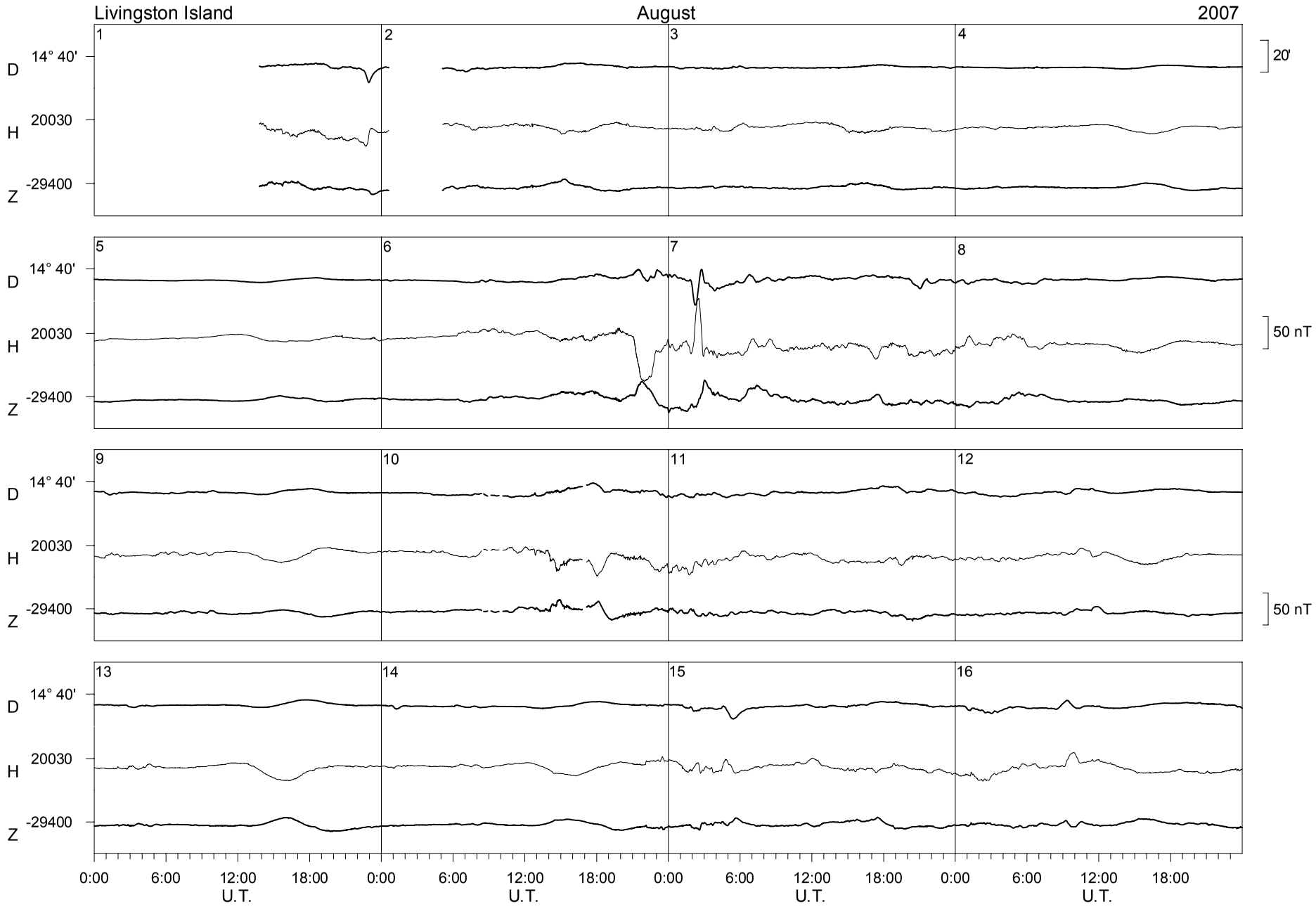
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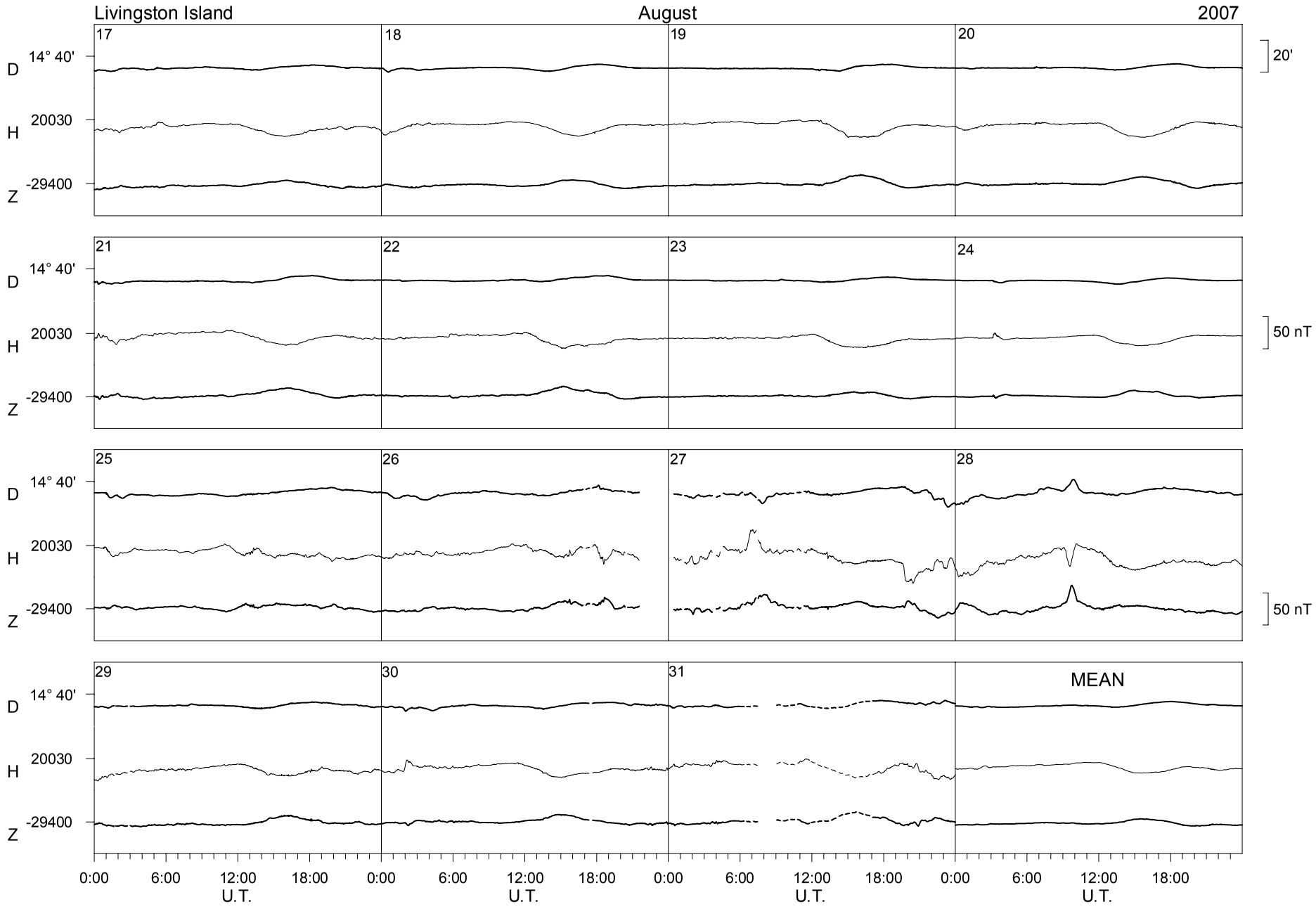
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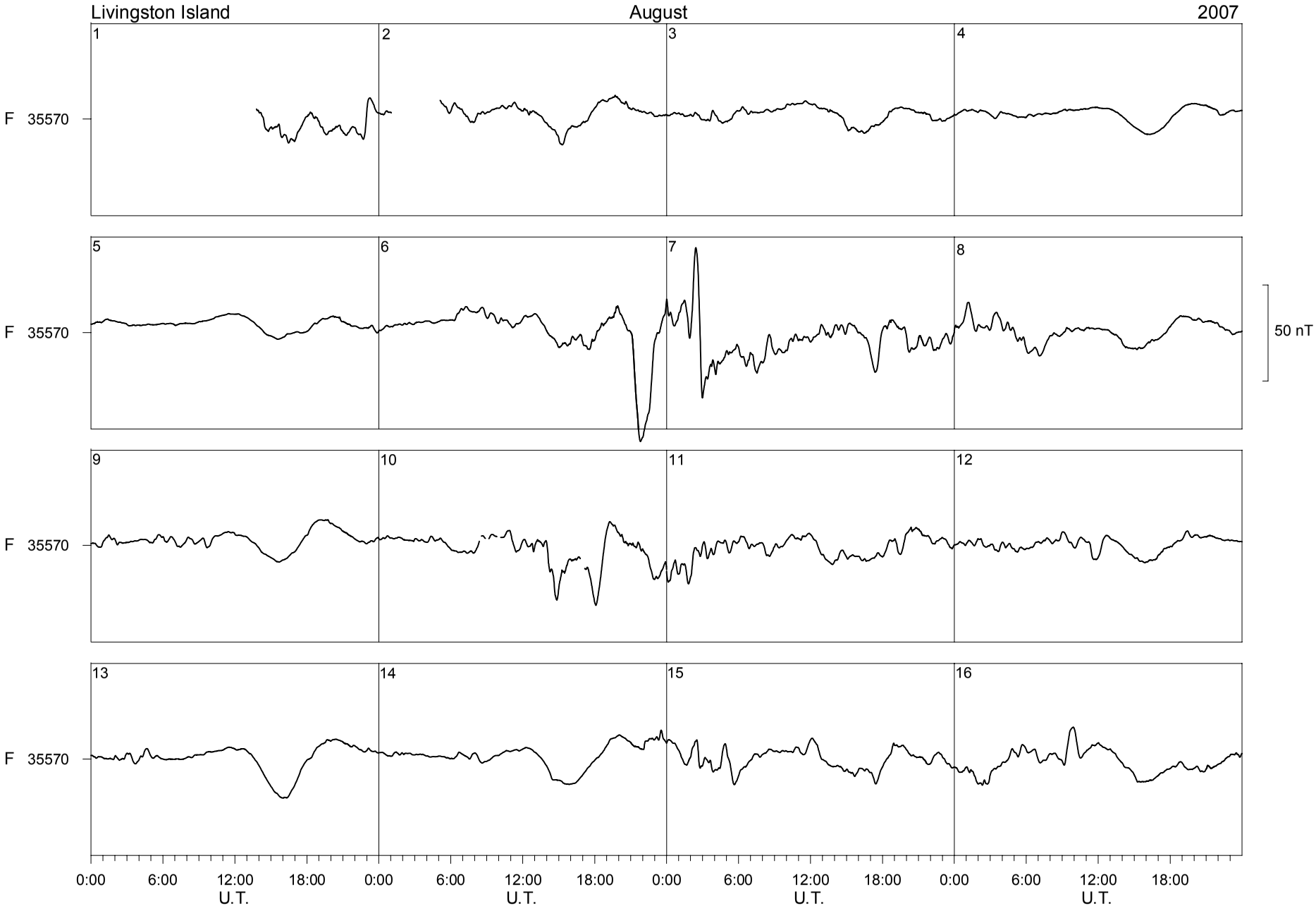
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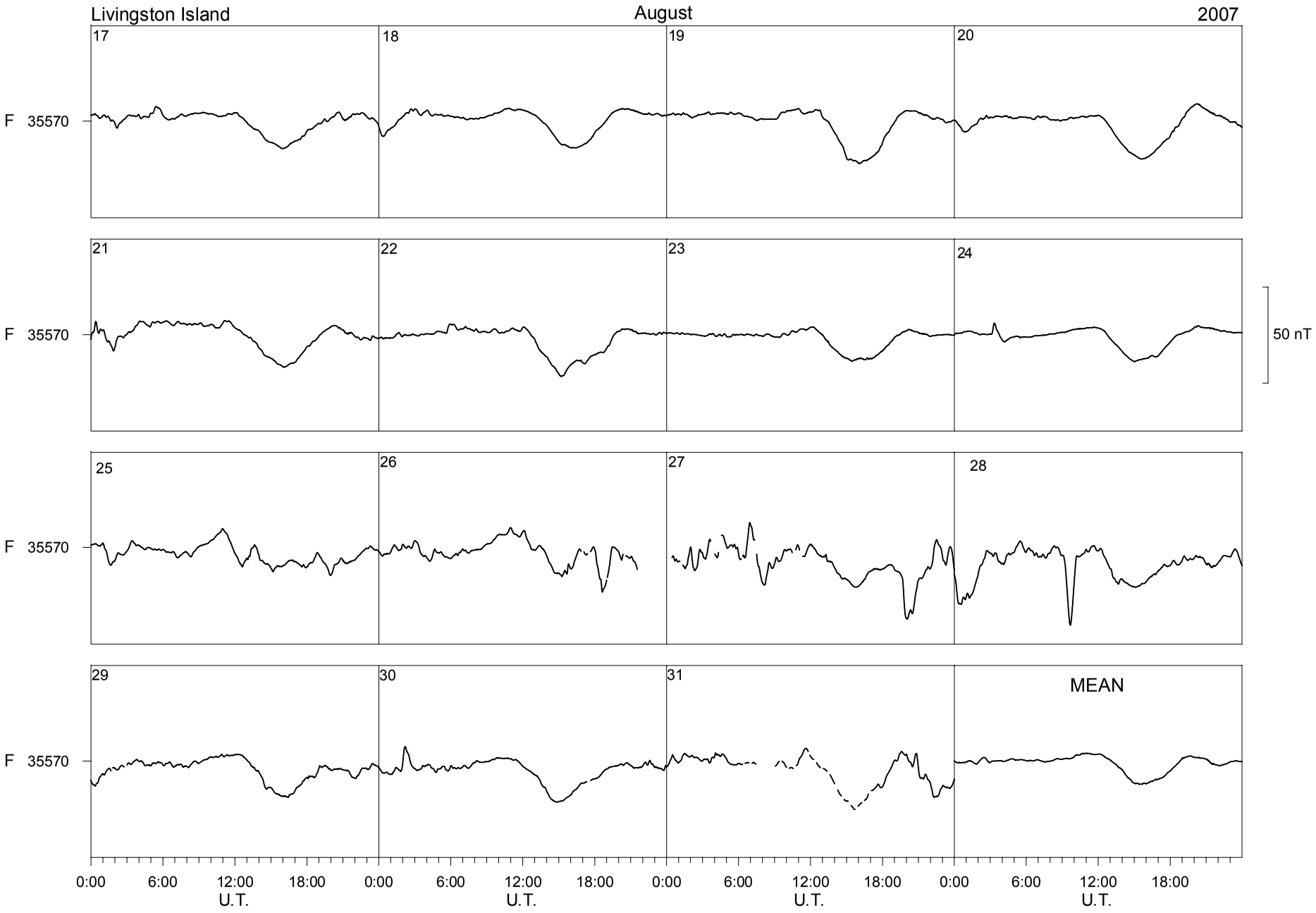
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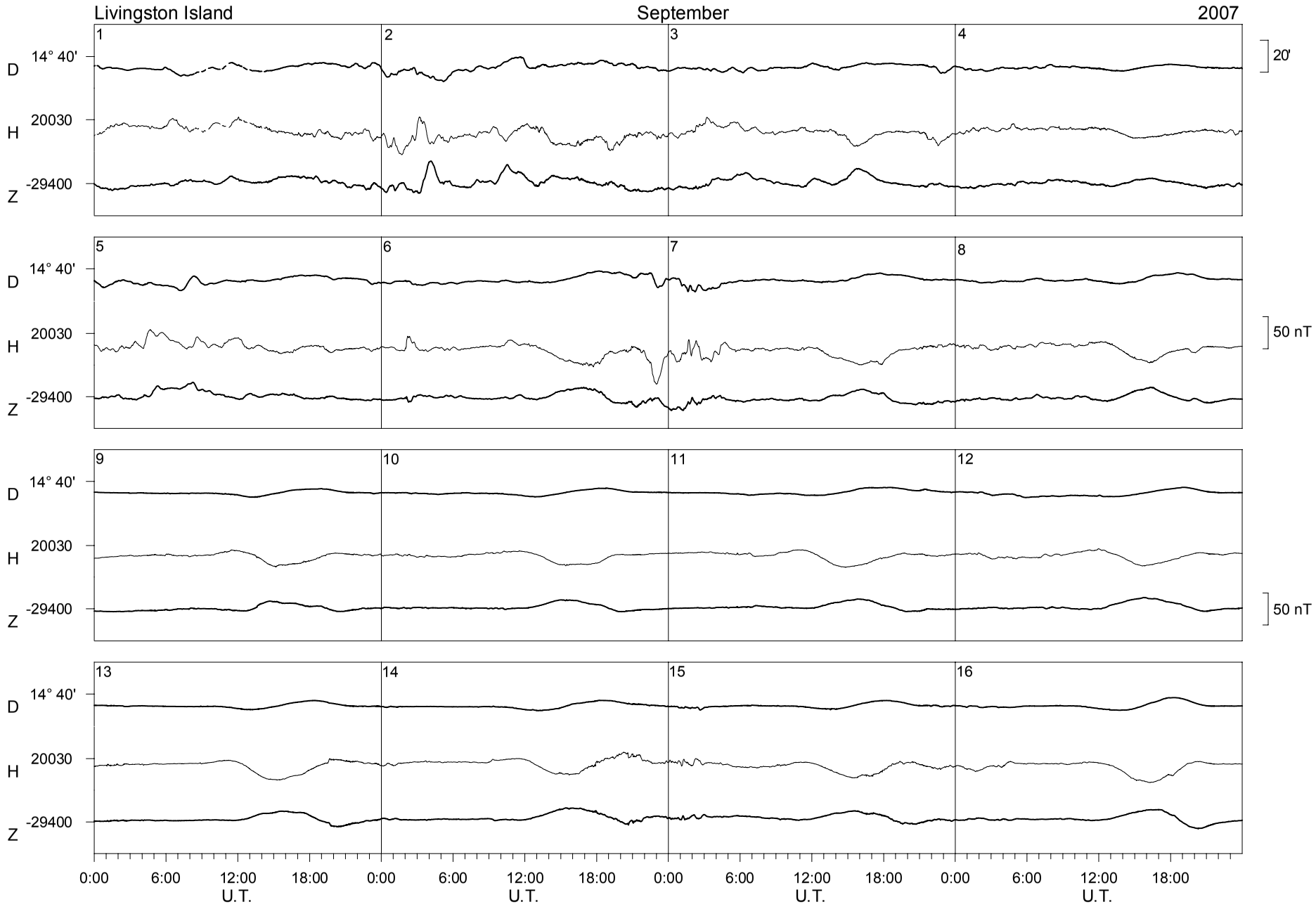
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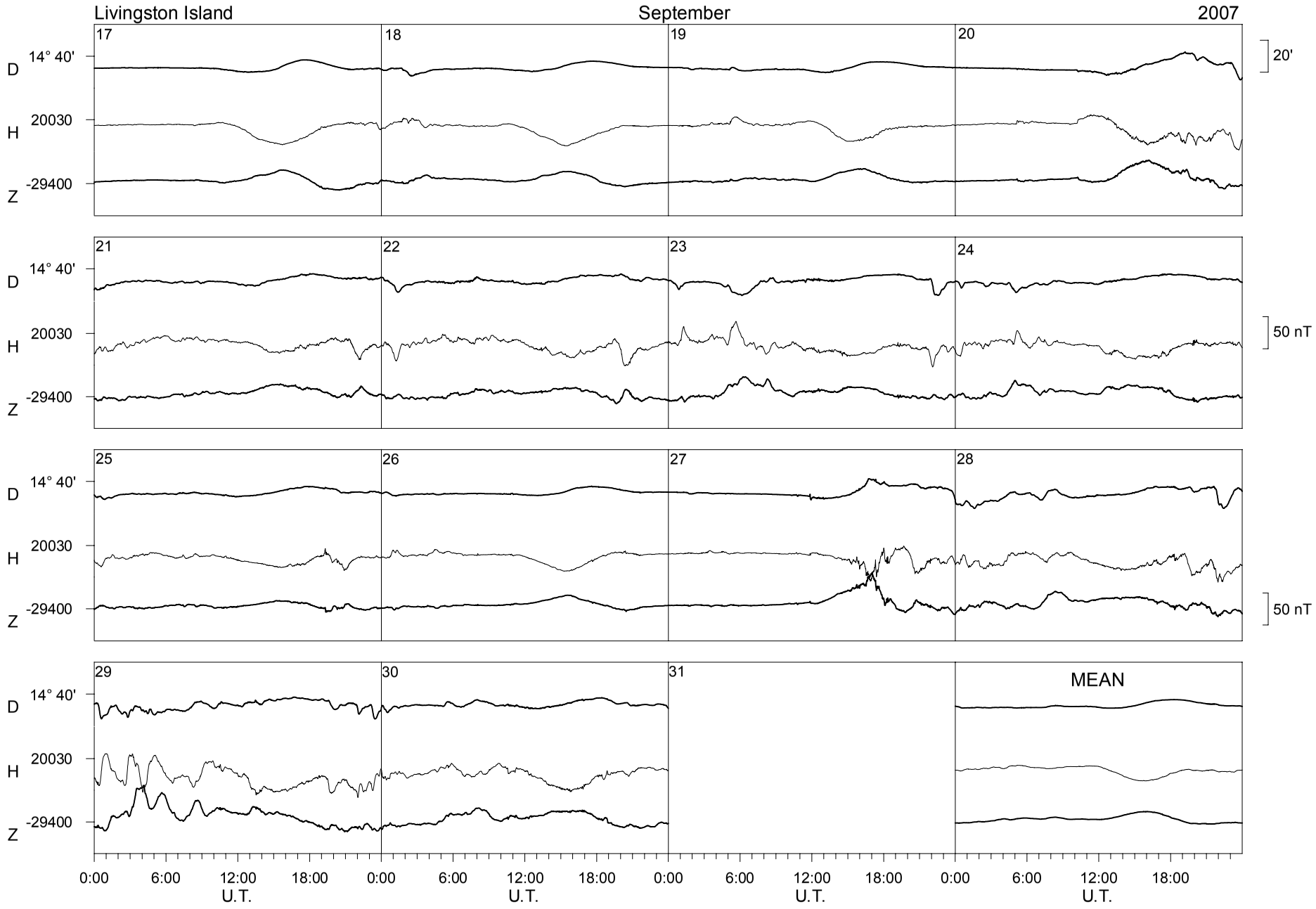
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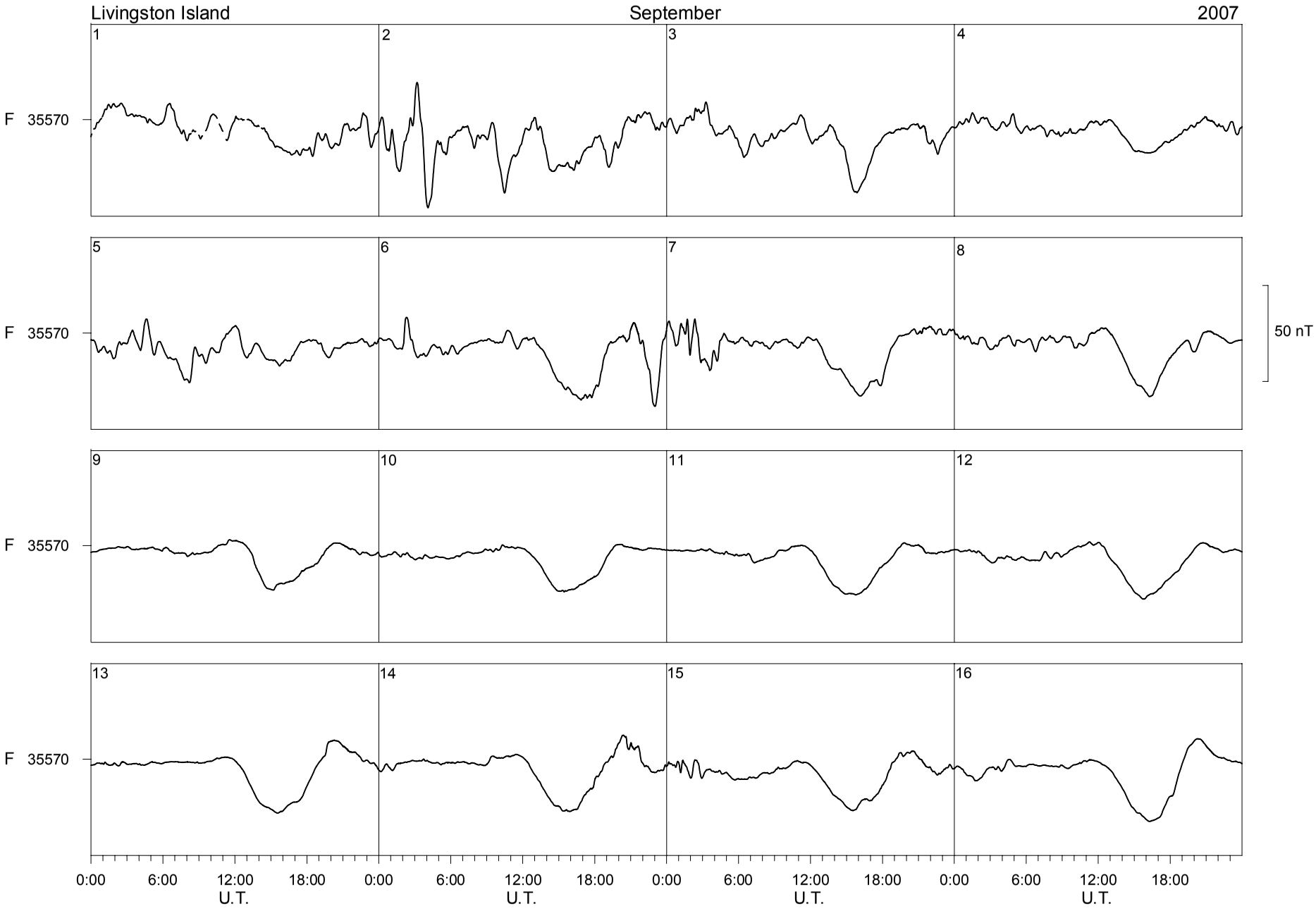
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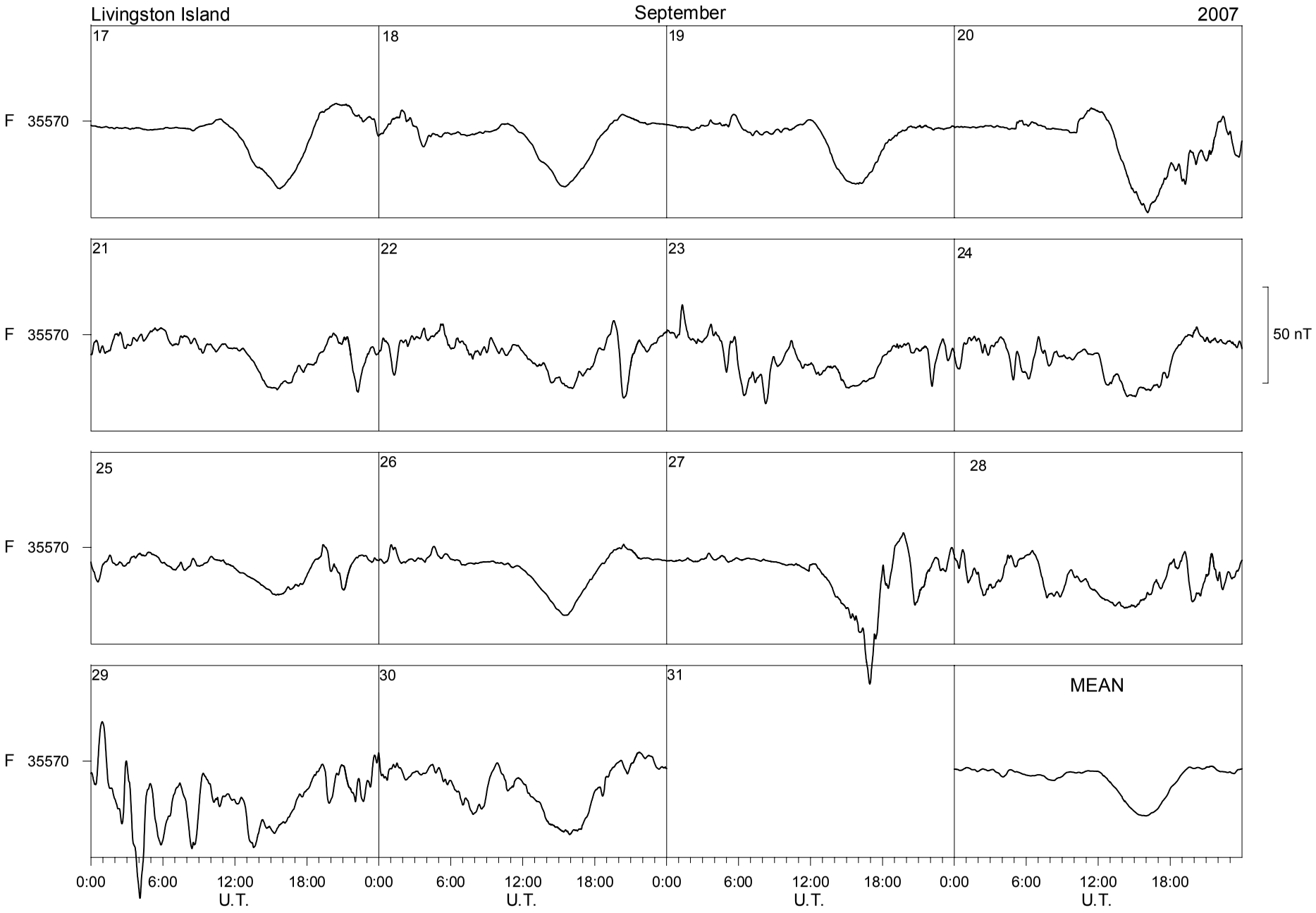
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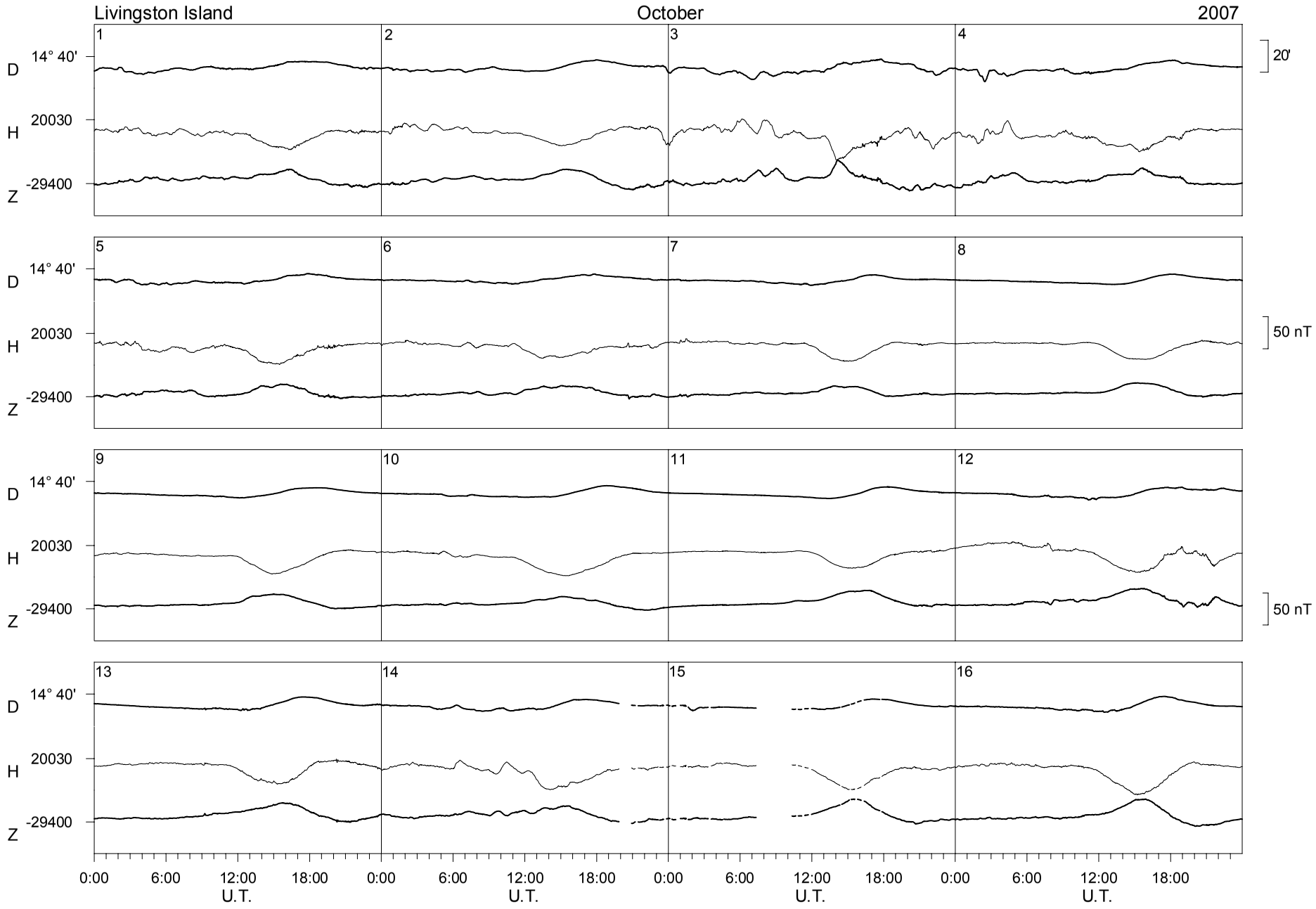
Livingston Island
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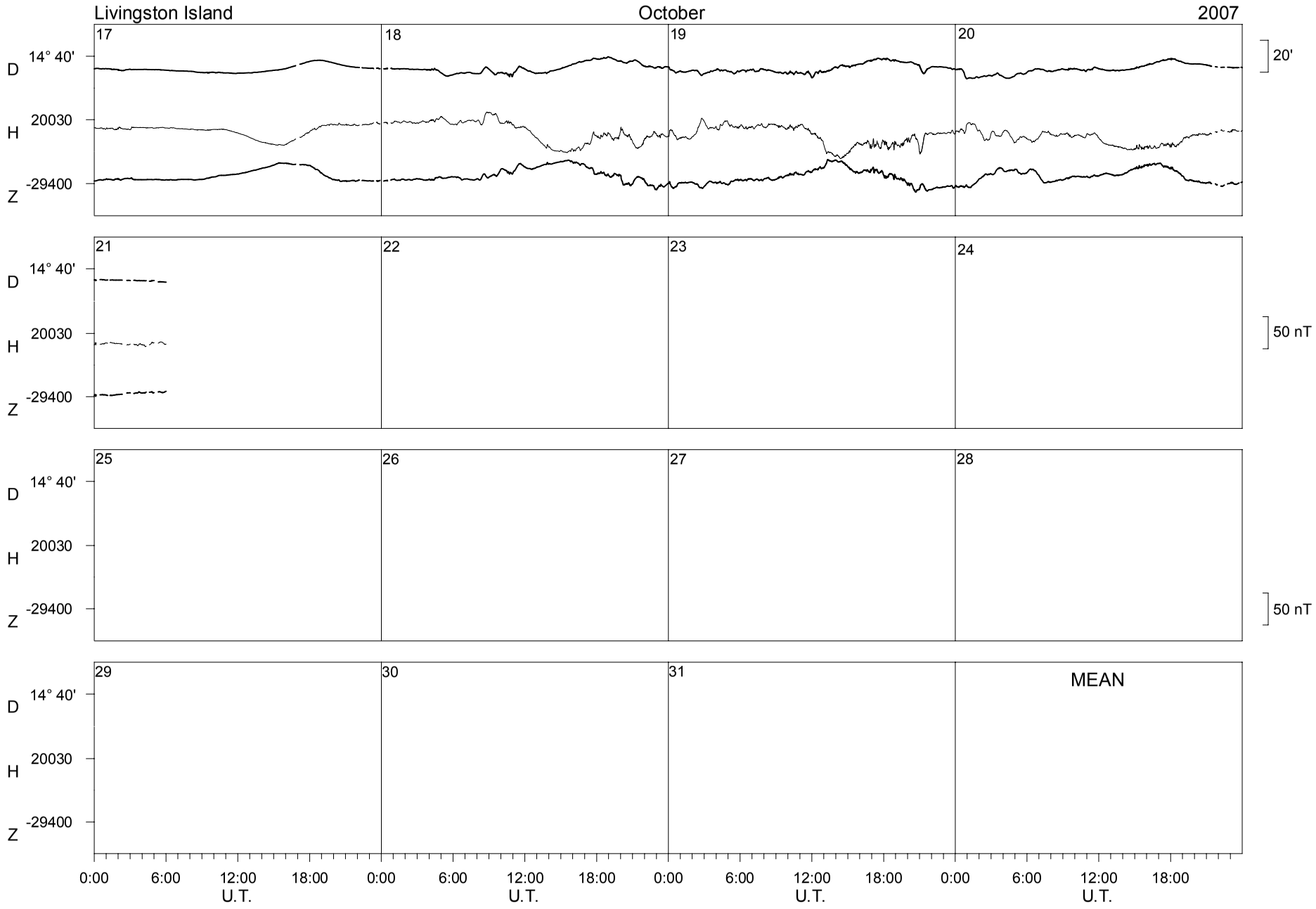
Livingston Island
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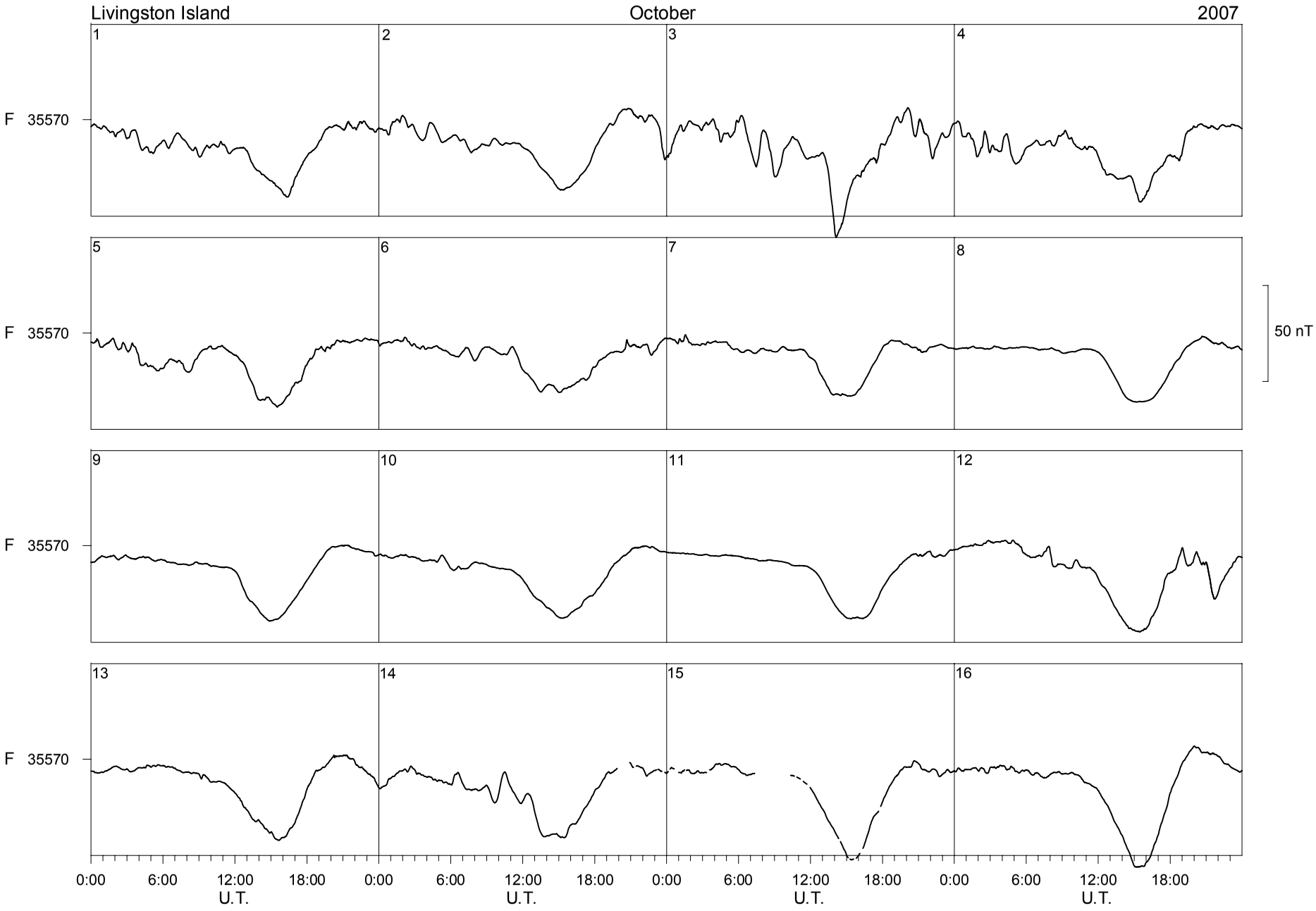
Livingston Island
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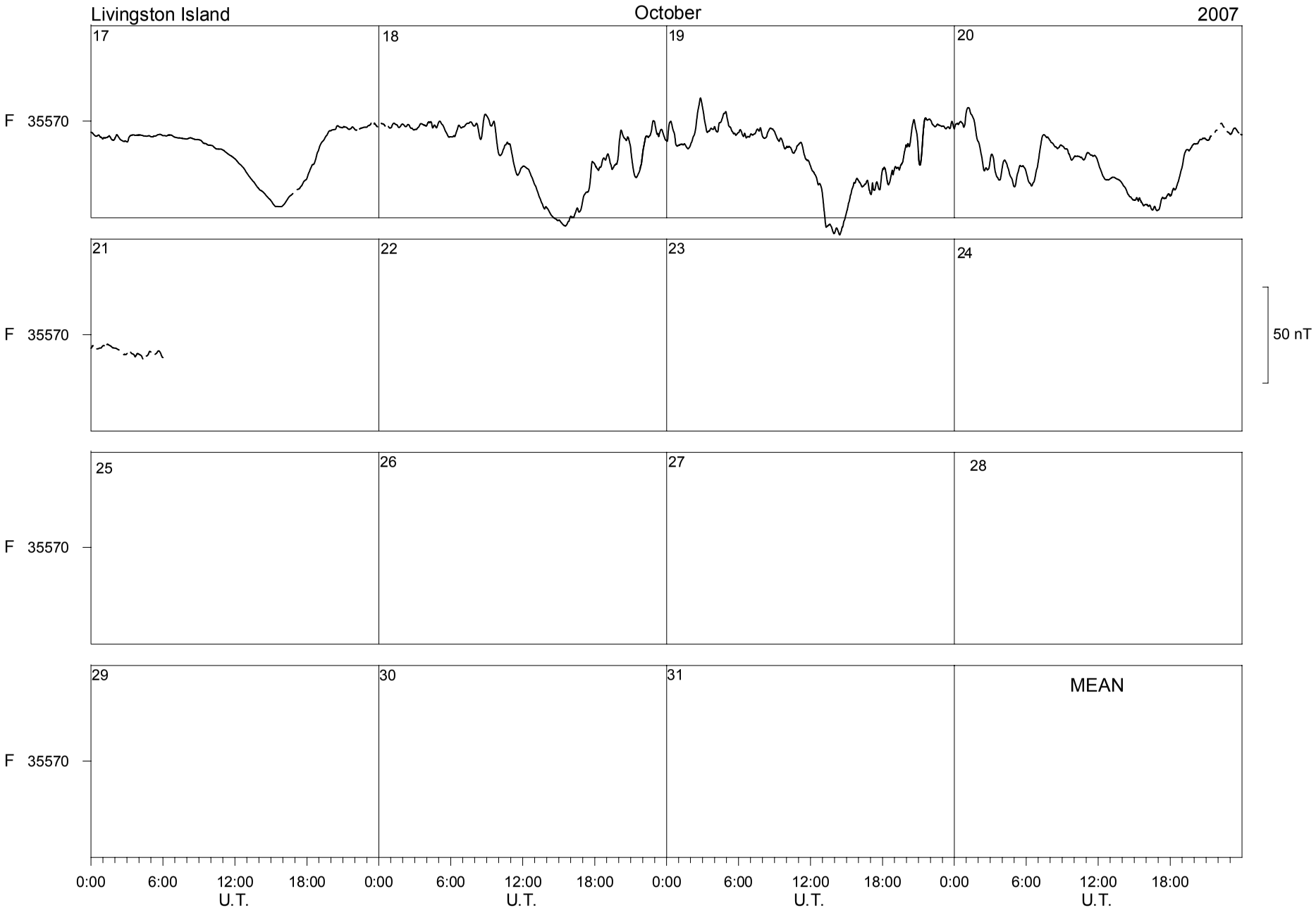
Livingston Island
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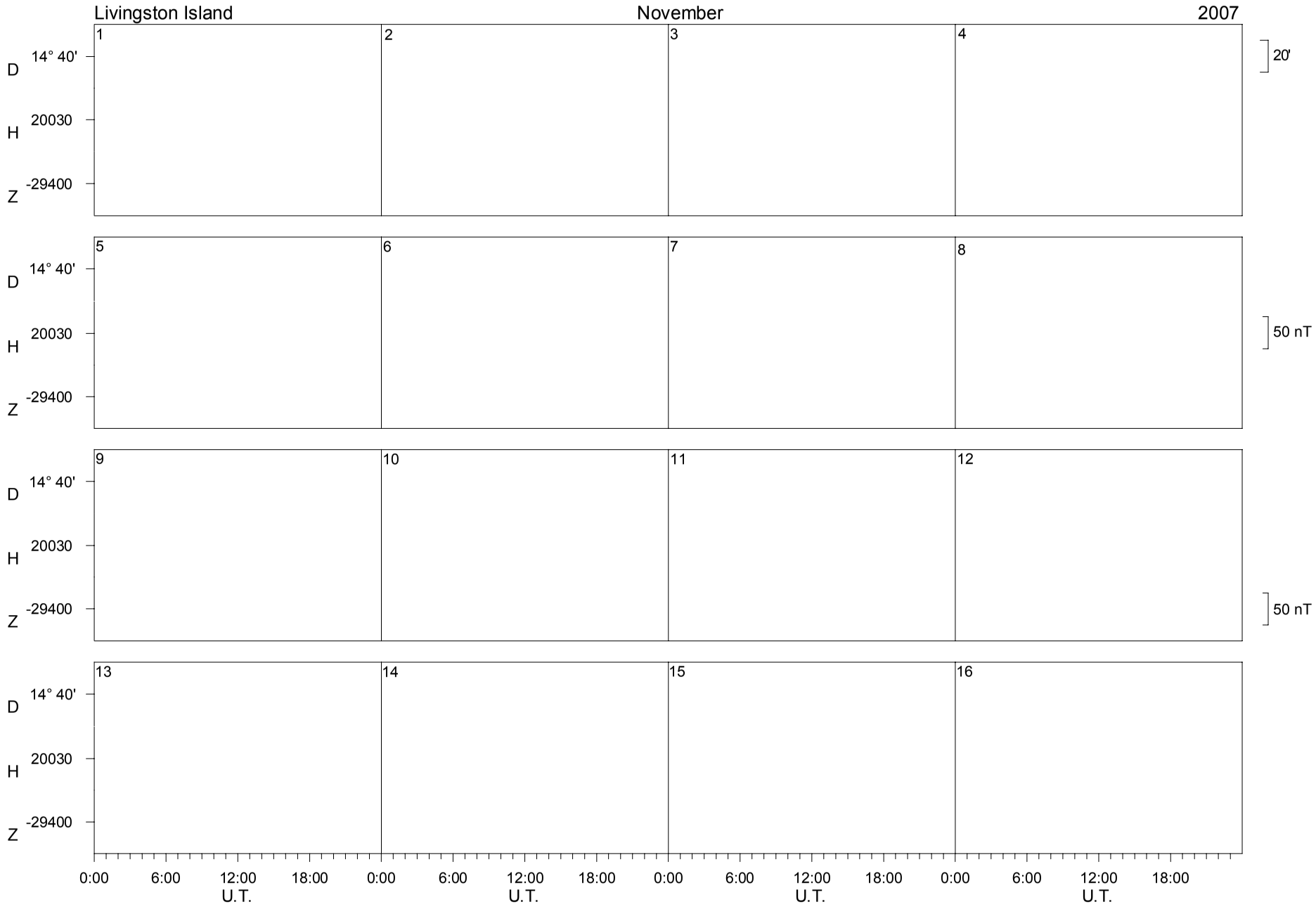
Livingston Island
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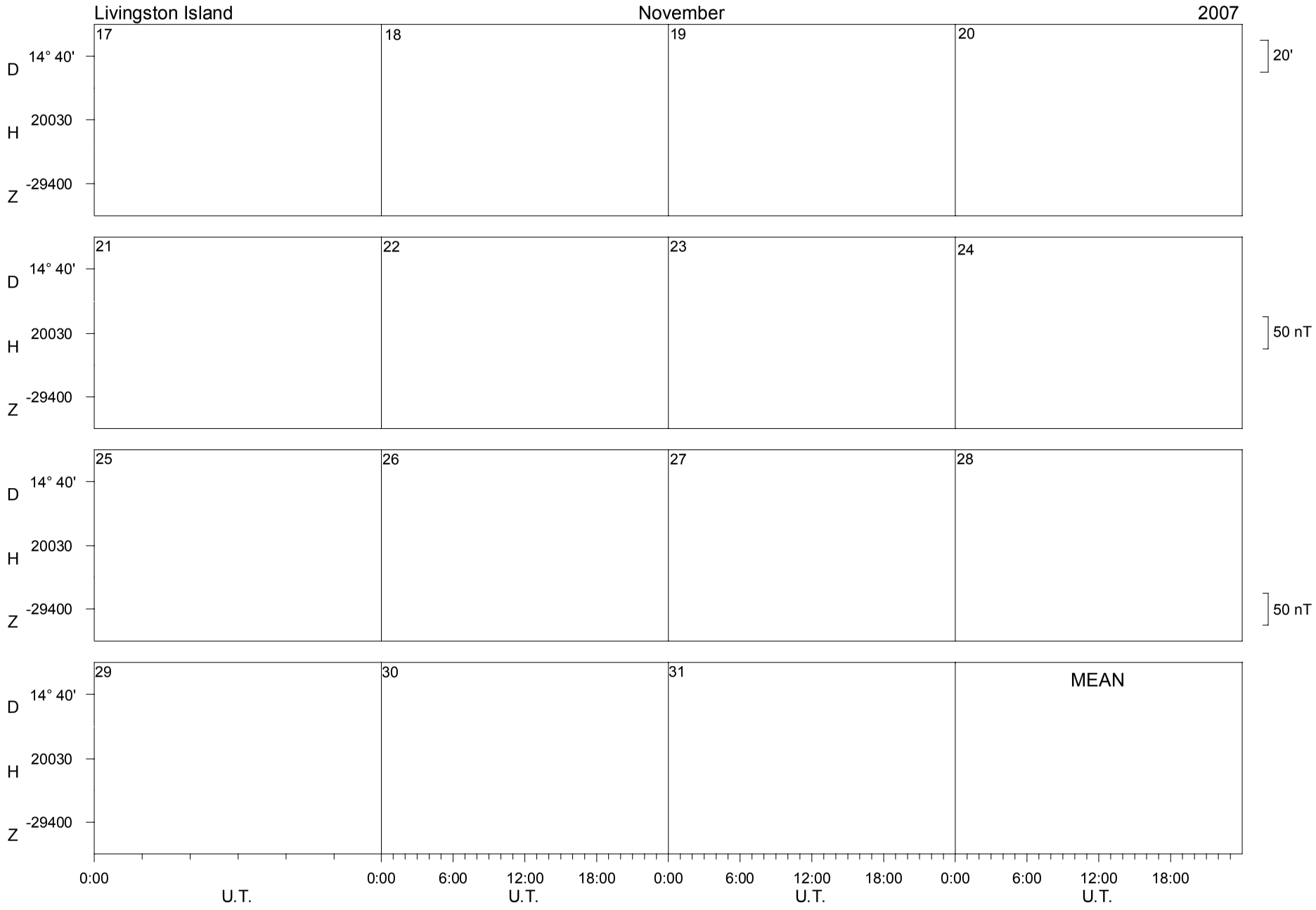
Livingston Island
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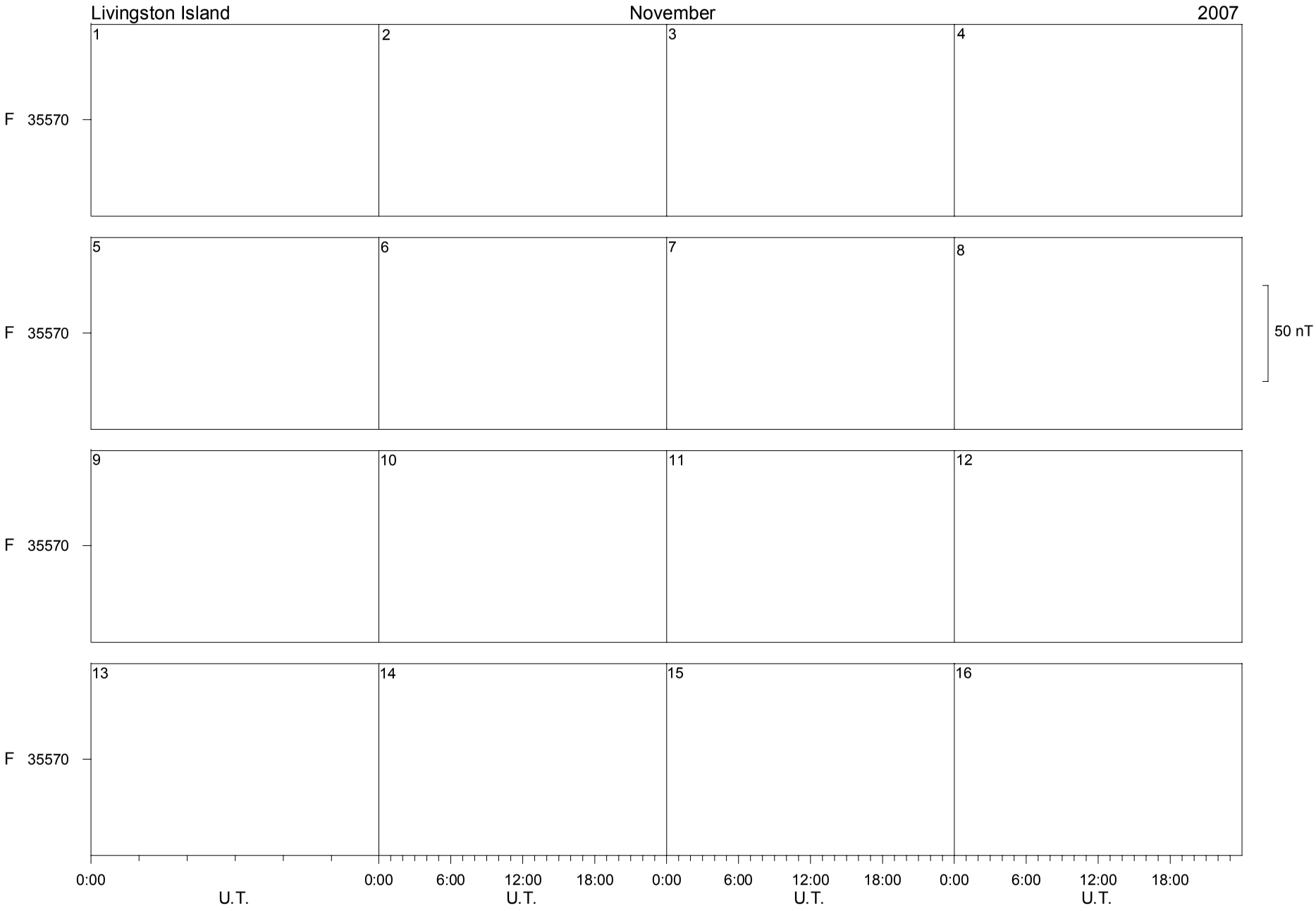
Livingston Island
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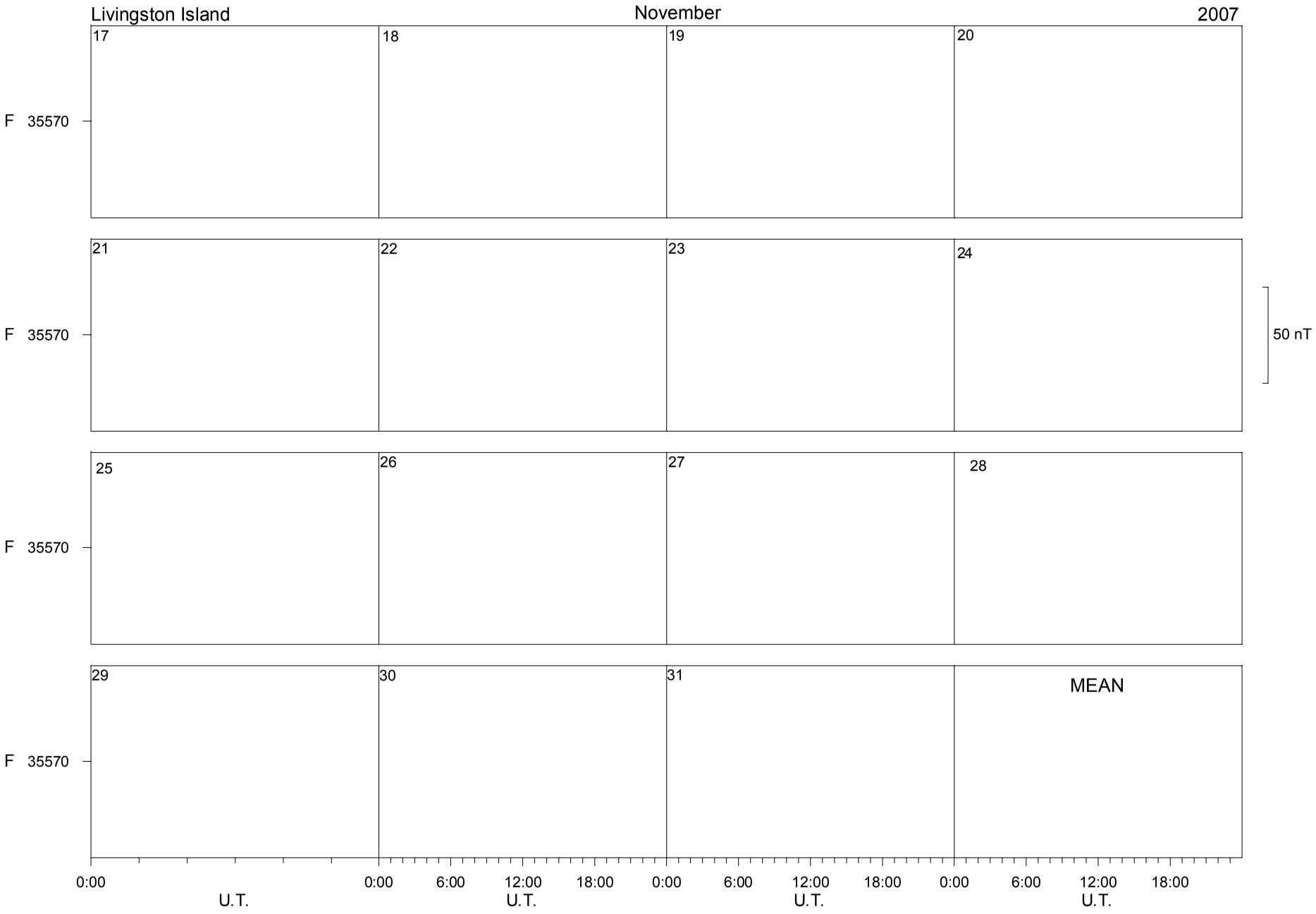
Livingston Island
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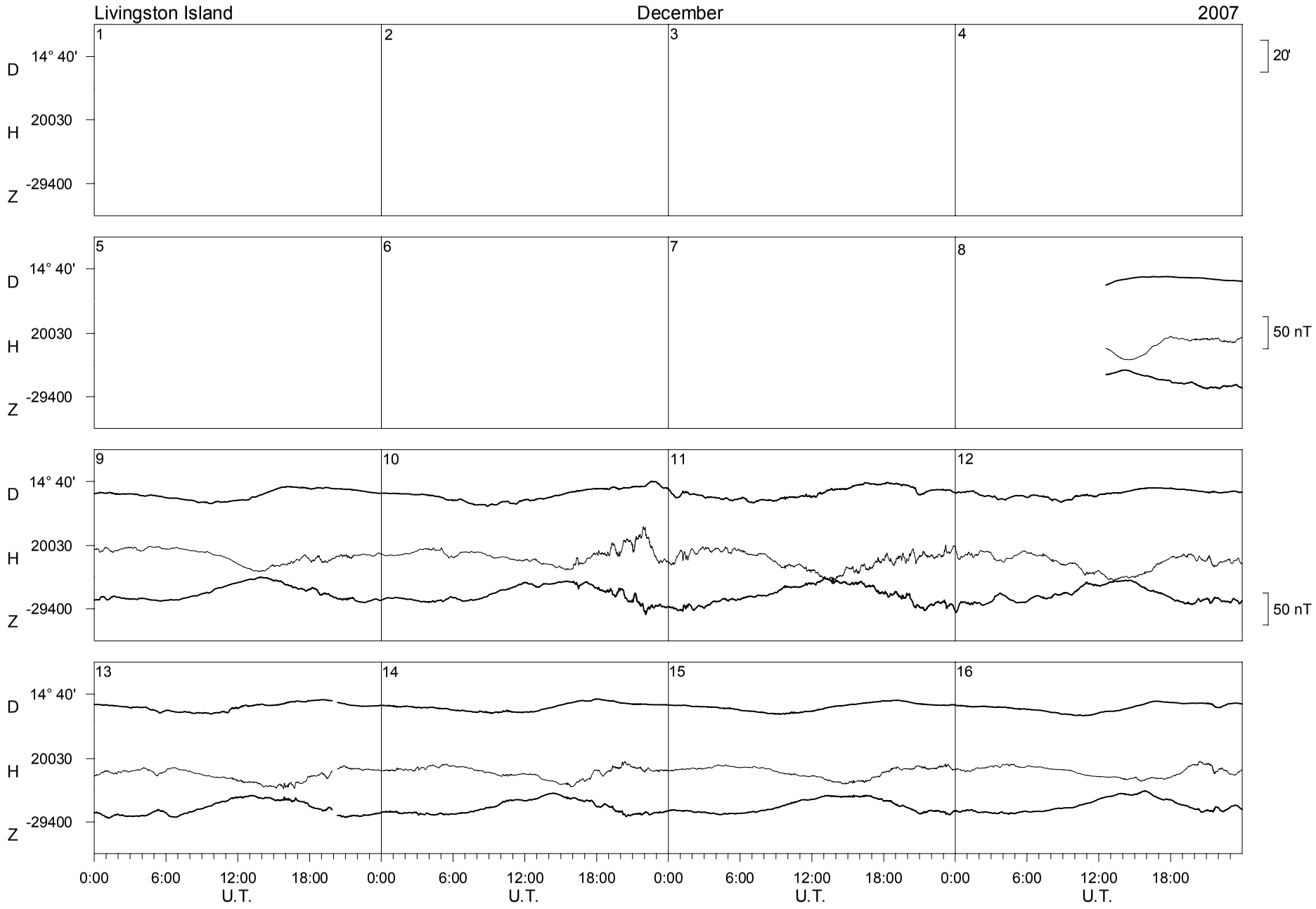
Livingston Island
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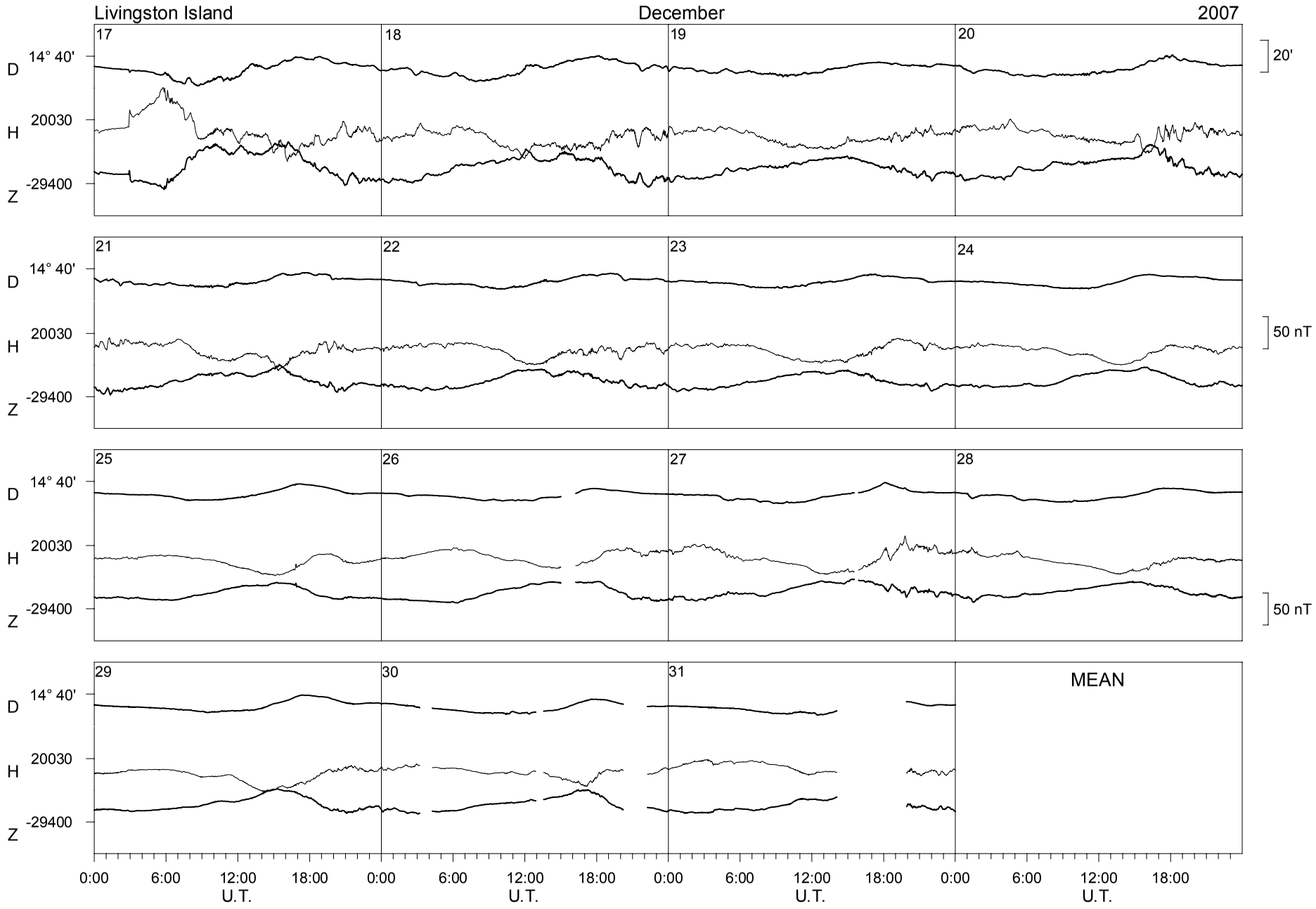
Livingston Island
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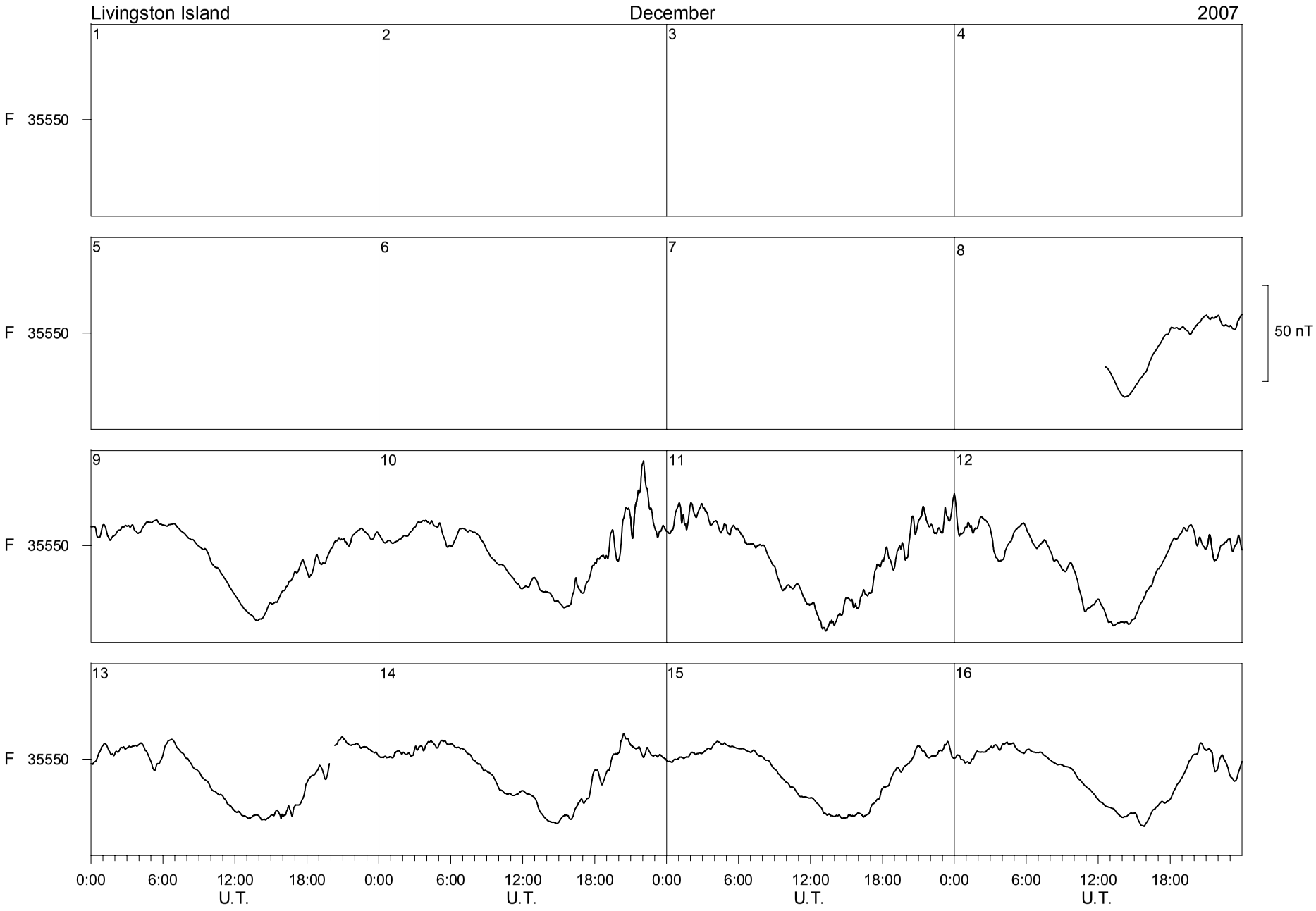
Livingston Island
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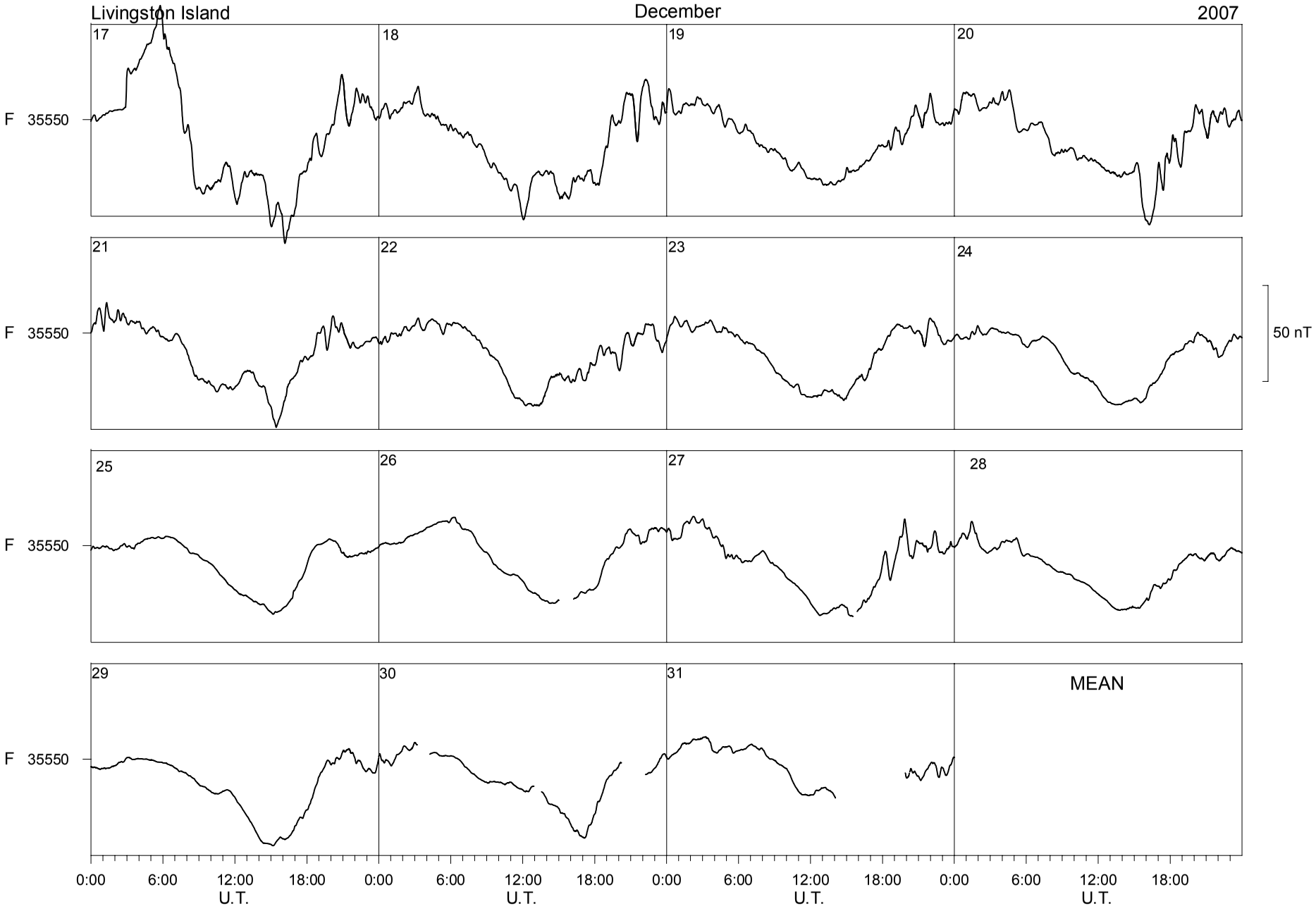
Livingston Island
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LIVINGSTON ISLAND MAGNETIC OBSERVATORY — DECLINATION EAST

JANUARY 2007 — D = 14 DEGREES PLUS TABULAR QUANTITIES (UNITS 0.1 MINUTES)

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		351	357	352	350	345	336	332	312	302	290	272	286	326	347	350	371	399	411	392	375	356	344	340	351	344
2	D	361	355	331	332	325	312	299	286	288	290	277	295	339	357	367	401	410	417	414	398	373	358	359	356	346
3	D	363	365	353	322	298	303	301	296	306	295	282	309	329	345	---	---	397	397	394	394	396	370	360	332	343
4		355	338	327	308	328	328	323	314	330	324	302	288	289	318	351	383	422	432	411	387	357	346	335	341	343
5		351	348	350	343	344	347	341	333	313	319	306	310	308	341	364	396	413	422	405	380	368	350	346	351	352
6		355	352	347	344	347	348	341	329	321	320	315	312	318	329	348	377	416	439	419	394	379	368	355	350	355
7	Q	350	351	351	352	352	348	339	327	318	320	319	320	326	342	353	375	403	419	408	393	386	377	366	361	356
8		356	357	350	348	346	339	333	325	322	318	310	299	301	308	314	341	381	413	418	407	388	370	356	353	348
9		354	354	351	348	341	334	329	320	324	333	331	314	300	298	328	358	395	419	424	403	394	377	364	357	352
10		356	353	350	342	335	340	333	326	312	323	331	333	335	331	336	368	408	422	408	396	385	378	369	364	356
11		361	355	350	350	341	336	316	303	307	314	317	318	325	345	340	359	396	412	402	384	367	360	356	353	349
12		345	347	357	358	357	355	353	349	336	331	340	342	341	337	338	354	376	392	395	384	369	361	357	356	356
13	Q	359	357	354	353	352	351	344	338	329	324	331	332	336	336	348	360	369	379	382	377	365	354	351	352	351
14		352	351	352	353	353	349	341	329	312	310	316	320	325	323	342	374	395	400	381	363	357	359	367	369	350
15		370	367	361	360	358	351	347	325	279	264	283	322	304	355	401	378	391	423	429	407	383	371	362	362	356
16		357	352	351	348	313	303	308	310	306	309	308	296	308	331	359	387	400	396	407	417	403	378	320	351	347
17	D	349	295	338	335	324	306	287	295	314	335	333	327	334	350	356	369	386	409	439	397	399	395	383	377	351
18		375	373	361	328	310	324	340	327	322	328	331	342	353	365	380	402	423	414	404	407	389	380	363	341	362
19		372	369	353	310	319	318	319	318	315	314	314	307	326	335	354	366	372	375	386	392	387	368	343	360	345
20		360	349	342	351	345	336	330	336	325	323	322	324	328	334	347	369	389	400	394	385	379	366	355	361	352
21		363	351	336	343	337	324	303	293	293	299	308	320	322	335	349	361	375	397	403	382	367	359	353	351	343
22		352	354	353	349	345	342	338	327	313	313	307	309	319	334	352	371	397	412	406	380	370	369	366	364	352
23		355	350	351	347	344	344	341	332	323	311	309	313	320	333	351	368	377	388	392	384	376	369	363	359	350
24	Q	357	353	349	346	343	338	337	333	324	314	309	312	322	333	350	374	386	391	383	381	377	379	378	370	352
25	Q	---	---	---	345	341	337	334	327	318	316	317	329	---	---	---	---	378	386	388	---	378	371	360	358	---
26	Q	---	344	343	342	342	334	328	322	319	308	301	306	319	325	335	354	373	384	380	373	367	358	353	354	342
27		359	357	353	352	337	336	337	330	326	322	314	317	330	336	347	369	396	403	397	381	366	357	355	356	351
28		353	339	336	346	343	329	327	326	311	306	313	310	323	325	342	362	379	391	393	395	389	379	366	374	348
29	D	365	341	336	342	337	330	318	288	248	259	273	290	301	---	---	---	425	460	475	429	410	403	358	361	351
30	D	365	348	339	316	300	332	289	305	328	317	308	309	344	374	401	404	405	406	403	---	---	378	370	368	352
31		333	333	345	347	339	346	327	328	322	310	330	336	344	358	354	362	378	397	399	386	382	358	359	340	350
MEAN		357	351	347	342	337	334	327	320	313	312	311	315	323	337	352	373	394	407	404	390	379	368	358	357	350
MEAN	Q	356	---	---	348	346	342	336	329	322	317	315	320	327	---	---	364	382	392	388	381	375	368	362	359	350
MEAN	D	361	341	339	330	317	317	299	294	297	299	295	306	330	353	---	---	405	418	425	---	---	381	366	359	348

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — HORIZONTAL INTENSITY

JANUARY 2007 — H = 20000 nT PLUS TABULAR QUANTITIES (UNITS 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	MEAN
1		65	63	65	69	69	70	73	74	73	71	66	52	57	66	69	73	69	75	71	78	70	79	84	87	70
2	D	73	55	69	77	66	58	56	52	45	43	46	32	29	41	36	37	51	58	61	70	63	77	65	56	55
3	D	60	67	62	69	61	52	54	56	57	52	43	36	31	22	---	---	50	66	71	76	72	65	48	58	55
4		57	64	55	59	53	57	55	55	51	47	42	37	29	19	11	22	28	45	54	59	63	60	51	45	47
5		52	59	71	65	63	60	57	54	46	51	42	38	30	20	27	27	37	53	59	63	54	50	50	52	49
6		58	60	58	60	58	56	56	55	52	50	46	39	27	20	20	28	39	52	67	64	57	54	49	43	49
7	Q	49	55	58	58	58	56	56	55	52	50	44	36	29	25	27	27	29	40	51	58	56	59	63	59	48
8		55	56	60	62	64	60	58	57	55	52	48	50	51	46	40	34	35	40	46	49	53	57	56	59	52
9		65	67	71	74	75	74	69	64	63	66	68	60	50	45	39	40	38	39	45	42	50	60	67	66	58
10		64	65	69	69	65	67	64	63	62	56	57	58	53	50	49	47	46	49	56	44	49	52	56	58	57
11		60	65	63	67	72	75	72	65	57	52	53	55	50	40	42	45	41	51	50	40	44	45	50	54	55
12		54	50	54	55	56	55	56	56	54	50	48	48	47	43	42	43	43	45	42	41	44	47	50	51	49
13	Q	50	49	49	50	50	51	54	54	50	47	46	43	43	39	35	35	36	42	47	46	46	48	48	49	46
14		50	49	51	55	56	56	57	60	60	52	47	47	48	49	47	45	48	57	59	60	59	56	45	46	52
15		50	47	50	53	57	61	62	63	66	59	58	52	47	24	47	53	48	43	31	40	48	49	55	55	51
16		54	50	48	52	67	62	58	57	52	45	44	35	28	27	35	33	40	44	53	44	38	43	62	51	47
17	D	53	50	51	54	55	59	47	43	36	32	27	28	20	19	20	22	24	45	32	37	35	35	43	53	38
18		54	50	54	49	41	42	47	45	43	39	38	28	20	16	12	17	17	44	57	48	36	47	47	45	39
19		44	47	55	64	43	38	46	46	43	39	37	37	28	26	30	33	43	50	55	59	57	50	54	51	45
20		50	52	56	53	58	55	50	53	49	45	36	31	29	26	29	31	37	41	47	43	43	47	52	55	44
21		56	60	58	55	53	62	51	48	42	37	37	41	37	30	24	24	31	33	38	47	56	59	58	59	46
22		56	53	55	55	55	56	56	55	52	49	43	38	33	26	22	23	30	36	42	35	41	41	45	49	44
23		51	51	51	57	54	50	48	48	48	48	46	45	43	40	40	36	36	41	47	53	48	48	48	51	47
24	Q	51	54	56	58	57	57	57	55	53	51	45	38	34	33	33	34	27	31	35	39	41	50	56	55	46
25	Q	---	---	---	55	57	56	57	57	54	53	55	56	---	---	---	---	41	45	53	---	54	52	52	52	---
26	Q	---	58	58	60	60	56	50	47	49	48	45	45	47	46	34	24	23	30	38	46	49	50	50	56	47
27		60	61	60	60	67	58	60	59	58	58	58	56	49	39	33	31	36	46	51	52	50	54	58	57	53
28		59	60	63	64	65	58	58	61	57	52	48	43	34	31	31	37	42	46	50	56	59	52	61	62	52
29	D	51	57	62	73	78	85	89	91	67	56	57	50	40	---	---	---	56	47	41	31	30	25	15	28	52
30	D	37	46	46	42	50	57	47	33	38	33	28	17	6	9	16	24	39	52	53	---	---	44	38	43	37
31		49	40	39	47	51	57	53	51	45	38	34	38	32	26	35	50	62	64	47	47	39	41	41	47	45
MEAN		55	55	57	59	59	59	57	56	53	49	46	42	37	33	33	35	39	47	50	51	50	51	52	53	49
MEAN	Q	51	---	---	56	56	55	55	53	52	50	47	44	41	---	---	32	31	38	45	49	49	52	54	54	48
MEAN	D	55	55	58	63	62	62	59	55	49	43	40	33	25	25	---	---	44	53	52	---	---	49	42	48	47

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — VERTICAL INTENSITY

JANUARY 2007 — 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
DAY																										
1		60	61	58	55	53	52	51	52	57	63	68	83	88	81	83	82	81	69	66	59	63	57	54	52	64
2	D	50	55	44	46	58	59	59	59	62	68	70	82	92	78	85	83	69	58	54	43	47	36	42	52	60
3	D	50	47	44	43	61	58	48	48	53	67	73	78	77	79	---	---	56	46	39	37	42	38	44	42	54
4		47	43	42	45	54	47	50	53	65	72	71	71	75	83	87	84	84	67	50	39	37	42	50	54	59
5		53	48	45	50	51	53	56	59	66	66	72	75	81	90	86	84	79	65	54	50	51	54	50	51	62
6		52	49	50	50	53	54	54	53	58	63	67	73	78	81	88	89	86	75	57	54	54	50	51	57	62
7	Q	55	53	51	54	54	55	54	55	56	62	65	70	78	82	83	83	85	75	61	53	54	54	54	52	62
8		51	51	50	50	52	53	54	56	59	61	66	68	64	71	81	90	94	84	72	63	55	50	52	54	63
9		52	52	52	53	53	54	57	59	62	65	64	64	70	81	88	87	87	84	75	69	60	57	53	52	64
10		54	53	52	52	56	54	56	57	58	65	75	74	74	73	74	79	86	85	72	71	65	61	59	54	65
11		54	48	48	48	48	49	52	54	59	66	66	69	74	83	86	87	89	84	75	71	63	63	57	54	64
12		45	52	54	54	56	57	56	57	58	64	70	71	67	66	69	74	77	73	69	67	62	59	57	57	62
13	Q	58	56	55	56	57	56	55	56	58	65	69	71	72	71	75	82	85	82	71	63	55	55	58	58	64
14		57	59	58	56	56	55	54	53	52	62	68	69	68	65	68	77	81	76	71	68	64	60	68	66	64
15		55	55	51	51	50	51	50	52	56	65	72	79	80	104	89	78	88	90	87	66	52	53	51	52	66
16		55	57	57	54	51	61	57	55	60	65	71	70	73	79	86	87	75	69	67	69	68	63	38	49	64
17	D	44	44	50	49	54	73	73	64	68	76	81	71	74	75	75	80	78	72	78	64	58	54	51	46	65
18		49	50	50	52	55	57	58	63	64	67	68	77	80	79	80	79	85	66	55	52	60	54	41	37	62
19		49	50	45	50	64	58	53	52	56	62	66	68	75	75	78	75	69	67	67	59	55	60	52	56	61
20		56	55	54	56	53	54	57	57	57	61	68	70	71	76	81	86	80	71	64	61	58	55	50	51	63
21		55	49	52	56	56	60	69	69	66	69	74	75	73	75	80	83	80	72	65	54	48	49	51	53	64
22		57	61	59	59	58	57	56	56	57	61	68	75	78	81	79	77	78	79	74	69	63	63	60	56	66
23		52	52	55	53	57	59	59	58	59	59	60	65	70	74	76	77	72	69	68	59	57	56	57	55	62
24	Q	56	55	56	56	57	58	59	59	61	62	65	71	78	79	80	83	84	81	73	64	62	61	60	59	66
25	Q	---	---	---	59	58	59	59	58	59	64	66	64	---	---	---	---	80	80	75	---	67	58	53	55	---
26	Q	---	54	56	58	59	61	64	65	64	64	65	69	74	74	80	85	82	76	68	60	54	53	56	56	65
27		57	57	57	60	60	63	61	60	61	64	70	73	72	71	75	81	84	74	61	54	54	54	52	56	64
28		55	52	55	58	58	62	61	59	60	66	76	76	79	86	85	84	80	80	76	67	62	67	60	55	67
29	D	58	49	50	48	50	48	49	64	69	75	78	89	96	---	---	---	80	80	73	71	59	52	45	46	65
30	D	43	43	48	52	60	64	69	70	66	71	68	74	89	88	88	90	80	76	70	---	---	54	57	50	66
31		46	52	56	53	57	62	62	62	64	62	74	73	78	85	78	79	76	69	72	58	55	47	49	50	63
MEAN		53	52	52	53	55	57	57	58	60	65	69	73	76	79	81	82	80	74	67	60	57	54	53	53	63
MEAN	Q	57	---	---	56	57	58	58	59	60	63	66	69	74	---	---	82	83	79	70	62	58	56	56	56	64
MEAN	D	49	48	47	48	57	60	60	61	64	71	74	79	85	83	---	---	73	66	63	---	---	47	48	47	62

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — TOTAL INTENSITY

JANUARY 2007 — F = 35500 nT PLUS TABULAR QUANTITIES (UNITS 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	MEAN
1		128	126	129	134	136	137	139	139	135	129	122	101	100	110	111	114	113	125	126	136	128	138	143	146	127
2	D	140	126	143	146	130	125	124	121	114	108	109	91	81	99	90	93	112	125	130	144	137	154	143	129	121
3	D	133	139	139	143	124	122	131	132	129	114	104	96	94	87	---	---	123	140	148	153	147	146	131	138	126
4		134	141	136	137	126	134	131	127	116	108	105	103	95	83	75	84	87	110	130	141	145	139	128	121	118
5		126	134	143	136	134	130	127	122	111	115	105	100	90	77	85	86	96	117	129	135	129	125	127	128	117
6		130	134	132	133	130	127	128	127	122	117	111	102	91	85	79	82	91	107	131	132	128	129	126	118	116
7	Q	123	128	131	129	128	127	127	126	123	117	111	103	92	87	87	87	87	101	119	129	128	129	131	130	116
8		129	129	134	134	134	130	128	126	123	119	113	113	116	108	97	85	83	93	107	115	125	131	129	129	118
9		134	135	138	139	139	137	132	128	125	125	126	122	111	99	90	91	90	93	104	107	120	127	134	135	120
10		132	133	136	136	131	134	130	129	127	118	110	112	109	108	107	101	95	98	112	107	115	120	123	129	119
11		130	137	137	139	142	143	138	132	124	115	116	114	108	94	93	94	90	100	107	105	113	113	122	127	118
12		134	126	126	127	125	124	126	125	123	115	110	109	111	110	107	104	101	105	107	108	113	118	121	122	117
13	Q	120	122	122	122	121	122	125	125	121	113	109	106	105	104	98	93	90	96	108	115	121	122	120	120	113
14		121	119	121	125	126	126	128	131	131	118	111	110	112	115	111	103	101	109	115	119	121	122	109	112	117
15		124	121	127	128	131	133	134	133	132	120	113	104	101	68	94	106	94	90	87	108	124	125	129	128	115
16		126	122	120	125	136	125	126	127	120	112	107	103	96	90	90	88	101	108	114	108	106	113	144	129	114
17	D	134	132	128	131	126	114	107	111	105	96	89	98	91	89	89	87	90	106	95	109	112	115	122	133	109
18		130	127	129	125	118	117	119	114	111	107	106	92	85	84	81	85	80	110	127	124	111	122	133	135	111
19		125	126	134	136	112	114	122	123	118	111	107	105	94	93	93	97	108	113	116	125	127	119	128	123	115
20		122	124	127	124	129	127	122	123	121	115	105	100	98	92	89	87	95	105	114	114	116	121	128	129	114
21		127	133	131	126	124	126	112	111	110	104	101	101	101	96	88	86	91	100	108	122	133	134	131	130	114
22		125	120	123	123	123	125	126	126	123	117	108	100	94	88	88	90	93	96	103	104	112	112	116	122	111
23		126	126	124	129	124	119	119	119	119	119	117	113	106	102	100	97	101	106	110	122	120	121	120	124	116
24	Q	123	125	126	127	125	125	124	122	120	118	112	104	95	93	93	91	86	91	100	110	112	118	123	123	112
25	Q	---	---	---	122	125	123	123	124	122	118	117	119	---	---	---	---	98	100	108	---	116	121	126	124	---
26	Q	---	129	127	127	126	121	116	114	116	114	112	109	106	105	94	83	85	94	106	117	124	125	123	126	113
27		127	127	127	125	129	122	124	124	123	120	115	111	109	103	97	91	91	106	119	126	124	126	130	126	118
28		128	132	130	129	129	122	122	126	123	115	105	102	95	87	88	92	98	100	106	117	123	115	126	130	114
29	D	121	132	134	141	143	148	150	139	121	110	108	95	84	---	---	---	106	101	103	99	108	111	111	118	116
30	D	126	131	127	121	119	120	110	102	107	100	100	88	71	73	76	79	96	107	113	---	---	120	115	123	107
31		130	120	116	124	122	121	119	118	113	111	98	101	94	85	96	103	112	120	107	119	117	125	123	125	113
MEAN		128	129	130	130	128	126	125	124	120	114	109	104	98	93	92	92	96	106	113	120	122	124	126	127	116
MEAN	Q	122	---	---	125	125	124	123	122	120	116	112	108	102	---	---	91	89	96	108	117	120	123	125	125	114
MEAN	D	131	132	134	136	129	126	124	121	115	106	102	94	84	86	---	---	105	116	118	---	---	129	124	128	116

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — DECLINATION EAST

FEBRUARY 2007 — 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
DAY																										
1		315	353	358	349	335	331	332	324	323	324	325	332	341	345	357	375	382	392	395	376	363	359	350	354	349
2		356	352	348	346	344	343	342	324	313	306	297	300	314	332	349	369	381	377	360	351	333	329	334	342	339
3		348	348	351	349	351	345	336	330	323	307	299	294	304	323	344	373	400	406	394	371	351	340	343	354	345
4	Q	354	353	349	349	346	343	342	340	327	315	317	314	322	334	349	369	390	398	380	357	343	342	348	353	347
5		352	355	352	353	342	334	333	323	304	286	282	297	308	333	356	367	386	398	412	406	375	360	349	352	347
6		352	348	350	353	346	323	321	327	323	316	297	300	308	328	350	374	390	400	389	372	363	357	355	361	346
7	D	355	337	333	339	341	347	340	334	305	301	294	320	336	338	358	374	387	397	397	399	376	373	365	362	350
8		366	361	347	316	333	346	346	350	329	319	315	322	324	344	353	374	394	393	395	389	377	366	359	353	353
9		343	341	349	352	352	344	338	339	320	305	298	306	316	330	347	368	379	385	381	366	356	352	354	356	345
10		354	339	326	341	342	341	345	344	335	338	339	336	337	342	352	369	390	394	395	383	367	360	352	349	353
11		349	352	353	354	356	355	354	349	337	325	318	312	318	325	343	356	363	364	366	355	349	352	353	350	346
12		350	354	356	354	349	344	339	331	320	312	293	287	297	313	321	336	361	366	370	375	378	382	377	384	344
13	D	370	359	342	307	331	320	321	329	313	298	291	300	311	329	355	379	406	432	419	411	409	407	380	296	351
14	D	327	338	342	339	334	313	330	323	318	319	315	332	327	339	357	372	394	420	429	435	380	375	366	362	354
15	D	365	355	343	323	331	336	340	336	332	324	321	322	326	333	347	361	382	397	393	394	356	354	356	354	349
16		349	356	353	348	341	332	323	329	335	328	319	315	328	342	347	356	371	385	386	378	372	367	362	344	349
17		349	343	341	329	332	320	324	323	320	316	310	317	327	338	347	370	379	391	397	393	387	378	349	357	347
18		348	353	354	352	349	345	340	335	325	318	312	307	313	325	342	368	384	396	405	395	378	365	361	357	351
19		353	351	350	346	340	335	337	332	326	313	305	308	318	325	346	367	387	396	394	390	381	370	360	357	349
20	Q	352	349	348	348	344	339	340	338	328	318	308	306	310	316	330	353	377	392	395	---	394	378	---	353	348
21	Q	347	344	344	347	342	334	338	340	333	329	325	318	313	314	332	354	379	404	408	392	368	348	342	343	347
22	Q	340	341	341	341	340	336	335	332	327	323	319	312	311	318	338	353	376	398	403	397	386	366	363	361	348
23		353	338	345	346	339	336	336	332	325	319	316	314	---	324	327	338	355	368	379	382	375	369	358	354	344
24	Q	334	337	345	347	346	344	338	335	330	326	323	314	309	319	337	358	375	385	383	373	362	353	348	348	344
25		349	346	339	340	344	343	342	337	330	320	314	307	304	312	333	357	377	387	382	367	358	354	358	359	344
26		351	352	347	299	317	323	333	332	329	321	324	322	320	328	342	360	379	391	387	372	360	351	350	351	343
27		349	348	346	343	338	331	324	311	313	305	291	286	303	315	335	357	382	390	405	413	386	373	360	363	345
28	D	334	339	323	338	348	353	288	264	286	312	324	349	341	336	336	360	382	409	411	399	394	327	323	335	342
MEAN		349	348	345	341	341	337	334	330	322	316	310	312	318	329	344	363	382	393	393	385	371	361	355	352	347
MEAN	Q	345	345	345	346	344	339	339	337	329	322	319	313	313	320	337	357	380	395	394	382	371	357	353	352	347
MEAN	D	350	346	337	329	337	334	324	317	311	311	309	324	328	335	350	369	390	411	410	408	383	367	358	342	349

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — HORIZONTAL INTENSITY

FEBRUARY 2007 — 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
DAY																										
1		50	43	45	48	49	46	46	42	42	43	42	39	31	22	22	23	30	44	54	60	59	52	47	48	43
2		48	49	51	52	50	52	50	48	44	41	32	24	21	18	20	27	34	47	64	69	61	51	47	48	44
3		50	53	53	54	56	54	46	45	46	46	41	32	22	16	19	27	30	36	48	53	54	52	50	49	43
4	Q	51	51	54	54	56	55	53	53	55	52	50	43	34	22	19	29	44	56	65	65	59	59	56	56	50
5		63	61	60	63	61	62	63	59	55	53	54	49	41	27	27	28	40	42	52	52	48	52	52	44	50
6		47	54	53	59	55	46	43	50	47	47	43	38	35	28	26	22	24	35	41	53	58	54	52	53	44
7	D	57	48	43	52	54	58	55	59	48	46	45	38	35	34	31	39	40	37	49	42	34	35	37	45	44
8		43	53	54	48	47	54	49	51	50	47	45	43	42	31	27	23	20	39	47	47	43	47	47	46	43
9		44	47	51	55	58	57	49	48	47	47	46	44	37	28	25	28	25	30	40	41	42	42	42	41	42
10		45	46	48	46	48	48	46	45	45	44	45	41	33	24	19	17	16	30	40	39	36	35	39	39	38
11		41	41	43	43	42	43	46	47	48	46	42	33	29	25	23	23	24	31	47	42	42	48	45	46	39
12		48	50	52	55	56	55	55	52	51	49	53	54	55	58	52	51	42	34	47	49	54	61	66	50	52
13	D	55	65	64	59	60	57	53	55	54	48	41	35	37	35	30	31	21	32	35	60	56	43	53	37	47
14	D	27	32	54	50	49	51	58	49	39	33	35	31	29	24	15	16	20	23	27	30	31	38	37	43	35
15	D	41	43	46	64	51	47	45	44	45	42	40	37	30	26	21	18	15	23	33	42	35	45	49	45	38
16		50	50	51	50	49	50	48	40	40	39	37	36	29	24	26	22	19	24	26	35	38	44	38	34	38
17		44	49	46	50	48	47	42	41	38	39	37	33	33	32	23	20	19	25	32	38	44	38	39	38	37
18		46	46	46	45	46	46	46	44	43	44	46	43	32	26	21	19	19	32	37	39	42	44	46	48	39
19		49	49	49	50	50	49	51	48	48	48	46	43	40	34	26	19	23	25	35	45	48	47	46	49	42
20	Q	51	51	51	51	54	49	49	47	47	47	47	47	42	32	22	14	15	22	34	---	48	50	---	49	42
21	Q	49	50	55	56	54	52	50	49	49	51	55	53	45	32	17	9	11	18	32	46	53	53	51	52	43
22	Q	54	54	57	56	54	53	54	52	51	53	54	53	47	38	27	16	10	6	20	33	43	44	42	44	42
23		49	52	52	51	49	47	49	51	50	51	51	50	---	35	26	26	25	30	33	35	36	40	44	44	43
24	Q	45	46	49	53	55	54	53	53	52	51	53	46	37	29	25	23	27	34	44	51	50	47	47	49	45
25		50	50	49	53	56	57	57	55	52	48	45	39	35	32	33	35	34	33	35	43	50	51	52	59	46
26		60	56	48	67	62	53	44	43	44	42	45	42	33	24	23	25	29	38	45	47	48	47	47	47	44
27		48	50	53	53	57	60	63	64	59	57	52	47	45	38	30	28	23	38	51	40	34	33	43	38	46
28	D	27	30	34	41	50	67	49	43	35	40	30	26	24	17	16	9	4	16	17	33	30	31	31	28	30
MEAN		48	49	50	53	53	52	50	49	47	46	45	41	36	29	25	24	24	31	40	45	46	46	46	45	43
MEAN	Q	50	50	53	54	55	53	52	51	51	51	52	48	41	31	22	18	21	27	39	48	51	50	49	50	44
MEAN	D	41	44	48	53	53	56	52	50	44	42	38	33	31	27	23	22	20	26	32	41	38	38	41	40	39

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — VERTICAL INTENSITY

FEBRUARY 2007 — 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
DAY																										
1		44	56	56	54	54	57	58	59	60	66	69	72	77	78	82	90	87	80	74	65	63	60	61	59	66
2		60	59	57	57	58	58	60	60	58	60	67	74	79	81	77	75	74	72	60	52	51	55	59	60	63
3		60	57	58	59	60	64	64	61	60	60	65	74	84	89	89	87	82	73	66	59	56	59	62	65	67
4	Q	61	61	60	60	59	59	61	60	58	62	69	77	80	81	83	85	82	74	63	56	58	56	59	64	66
5		59	60	62	61	61	61	62	64	62	63	69	77	81	89	87	83	79	85	78	66	64	56	52	56	68
6		60	57	59	58	61	66	68	57	59	62	67	70	70	78	83	85	82	74	69	59	55	57	57	59	66
7	D	51	57	63	58	57	58	61	67	68	64	63	77	80	78	83	81	79	79	68	62	65	61	55	53	66
8		57	53	52	58	62	59	63	68	66	65	69	74	75	81	78	79	82	71	64	61	60	58	56	54	65
9		57	56	58	59	59	62	69	64	60	60	62	70	78	81	84	83	78	72	63	62	62	59	61	63	66
10		59	56	59	62	60	62	64	64	63	65	66	68	70	75	76	76	77	73	67	63	63	65	56	58	65
11		58	60	60	61	63	62	61	59	57	59	63	69	74	78	78	76	75	72	65	65	65	58	60	62	65
12		60	61	61	60	60	60	60	61	60	64	61	65	73	75	81	79	84	85	77	75	72	63	53	65	67
13	D	60	55	55	58	63	67	69	71	70	70	72	80	84	87	90	91	93	83	77	60	60	59	46	37	69
14	D	55	54	50	55	59	62	67	68	70	72	72	79	74	76	82	83	81	78	69	62	45	51	51	53	65
15	D	56	55	53	59	65	62	62	62	63	65	67	71	77	80	82	81	81	75	68	56	52	48	50	55	64
16		56	59	59	60	61	63	67	69	66	64	65	67	73	77	75	76	78	75	72	63	61	56	55	57	66
17		55	55	57	57	62	66	64	62	65	64	67	70	72	79	85	83	81	75	69	65	60	58	51	55	66
18		53	57	59	60	61	60	61	62	64	64	63	67	77	81	83	84	82	72	66	63	56	53	54	55	65
19		57	59	61	61	61	62	61	62	61	62	65	69	72	76	80	83	78	77	71	65	60	58	59	61	66
20	Q	61	62	63	64	63	66	66	65	63	62	63	69	75	80	87	90	90	85	77	---	64	61	---	59	69
21	Q	61	62	63	63	65	68	68	67	67	66	66	67	73	84	92	93	91	84	74	63	61	56	57	60	70
22	Q	63	65	65	67	67	68	67	67	67	67	67	68	72	80	88	92	92	86	73	62	53	52	56	59	69
23		56	58	63	65	66	68	66	64	65	65	66	69	---	74	78	78	81	81	78	72	66	61	58	60	68
24	Q	59	62	63	63	64	66	67	67	67	69	69	69	71	81	89	91	88	81	70	65	64	65	64	62	70
25		63	62	64	64	65	65	67	70	70	70	70	73	75	78	82	82	81	79	77	70	65	63	65	64	70
26		60	63	66	60	69	70	77	74	71	74	75	75	76	78	80	81	80	73	63	59	60	63	65	65	70
27		65	65	64	64	63	64	63	65	68	73	76	77	80	82	87	90	91	80	71	73	68	70	55	54	71
28	D	60	58	57	54	55	81	101	79	76	70	82	84	77	74	75	81	85	78	76	61	56	47	49	51	70
MEAN		58	59	60	60	62	64	66	65	64	65	68	72	76	80	83	84	83	78	70	63	60	58	57	58	67
MEAN	Q	61	62	63	63	64	65	66	65	64	65	67	70	74	81	88	90	89	82	71	63	60	58	59	61	69
MEAN	D	56	56	56	57	60	66	72	69	69	68	71	79	78	79	83	83	83	78	72	60	55	53	50	50	67

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — TOTAL INTENSITY

FEBRUARY 2007 — F = 35500 nT PLUS TABULAR QUANTITIES (UNITS 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	MEAN
1		132	119	120	123	124	119	119	115	114	110	107	103	94	89	85	79	85	100	109	121	122	120	116	118	110
2		118	119	122	123	121	122	119	118	117	114	104	93	87	84	88	94	98	108	127	137	133	124	118	118	113
3		119	123	122	122	122	118	114	115	117	117	110	97	84	76	78	84	90	100	113	122	125	121	117	114	109
4	Q	119	118	121	121	124	123	120	120	123	119	111	101	94	86	83	86	97	111	125	130	126	127	123	119	114
5		127	125	123	126	124	125	124	121	121	118	114	105	96	82	84	87	97	94	106	115	115	124	127	119	112
6		118	124	122	126	122	111	109	122	118	115	109	104	102	92	86	83	86	99	106	121	127	124	123	122	111
7	D	130	121	113	122	124	125	121	119	111	113	113	98	94	95	89	96	98	96	112	113	106	110	116	122	111
8		117	127	128	120	116	122	116	113	114	114	109	104	102	91	91	88	84	103	114	116	115	119	121	122	111
9		118	121	121	123	124	122	111	115	117	118	115	107	97	89	85	87	91	98	111	112	113	115	114	111	110
10		118	120	119	115	118	116	113	113	114	112	111	108	101	92	89	87	86	97	108	111	109	106	116	115	108
11		116	114	115	114	112	113	116	118	121	118	112	102	95	90	89	90	91	98	113	111	110	120	116	115	109
12		118	118	119	121	123	122	121	120	119	115	120	117	111	111	102	104	95	89	103	106	111	123	134	115	114
13	D	122	132	131	126	122	117	113	113	114	110	104	94	92	88	83	82	76	90	96	125	123	116	132	131	110
14	D	110	114	130	123	119	118	118	112	104	100	100	93	96	91	81	81	85	89	99	106	121	119	119	121	106
15	D	118	119	122	128	115	115	115	114	114	110	108	102	94	89	84	84	82	91	103	117	118	126	127	120	109
16		122	120	121	119	118	116	112	106	109	110	107	105	96	90	93	90	87	92	96	108	112	119	116	113	107
17		120	123	119	121	116	112	111	112	108	110	106	101	100	93	83	83	84	93	101	109	116	114	120	116	107
18		122	119	118	116	116	117	116	114	111	112	115	110	95	88	84	82	83	99	107	111	118	122	122	122	109
19		121	119	117	118	119	117	119	117	118	116	113	108	104	97	89	82	89	91	101	112	118	120	118	118	110
20	Q	119	118	117	117	119	114	114	113	115	116	115	110	102	92	81	74	75	82	96	---	115	118	---	119	107
21	Q	118	118	119	120	117	114	112	113	113	115	117	115	106	89	74	69	71	81	98	114	120	124	122	120	107
22	Q	119	118	119	117	116	114	115	114	114	115	116	114	107	96	83	73	70	72	91	108	121	122	118	116	107
23		122	122	117	116	113	111	114	116	115	116	115	112	---	99	91	91	87	91	95	101	106	112	117	116	108
24	Q	117	115	116	118	119	116	115	115	114	112	113	110	103	90	81	79	83	93	108	115	116	114	114	117	108
25		117	117	116	117	118	119	117	114	111	109	108	102	98	94	92	92	93	93	97	107	115	117	116	121	108
26		125	120	113	128	118	112	102	103	107	103	104	102	96	89	87	88	90	101	114	118	118	115	114	113	108
27		114	115	117	117	120	121	124	123	118	112	107	103	100	94	86	82	78	96	110	103	103	101	119	117	108
28	D	106	109	112	119	123	111	85	99	97	105	89	86	91	89	87	79	73	85	87	109	111	119	117	114	100
MEAN		119	120	120	121	119	117	114	115	114	113	110	104	98	91	86	85	86	94	105	114	116	118	120	118	109
MEAN	Q	118	117	119	118	119	116	115	115	116	115	115	110	102	91	80	76	79	88	104	115	119	121	119	118	109
MEAN	D	117	119	122	123	121	117	110	111	108	108	103	94	93	90	85	84	83	90	99	114	116	118	122	122	107

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — DECLINATION EAST

MARCH 2007 — 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
DAY																										
1		318	325	351	349	324	308	309	317	309	320	320	316	335	344	348	361	375	383	386	384	373	362	352	350	342
2		348	347	348	346	341	340	342	339	334	332	332	330	324	322	327	341	362	384	392	393	379	367	354	350	349
3	Q	348	346	345	345	342	337	335	334	331	325	318	309	307	307	324	352	372	387	386	379	365	356	351	349	344
4		346	345	344	339	333	332	332	333	333	328	322	315	314	314	329	351	374	390	395	393	381	361	345	335	345
5		328	338	342	341	337	336	333	331	328	335	357	332	320	325	337	366	390	403	402	408	393	367	354	343	352
6	D	351	290	311	290	298	302	307	326	333	331	344	359	372	351	335	346	368	393	405	398	383	364	348	333	343
7	D	272	298	306	326	322	307	337	323	329	364	334	326	331	336	350	355	364	383	381	370	362	341	326	308	335
8		318	337	342	343	345	348	347	347	343	338	333	329	331	334	342	357	374	385	382	374	361	350	344	341	348
9	Q	344	344	348	347	343	341	342	342	339	335	328	320	315	320	336	352	368	381	389	385	374	361	364	355	349
10		350	338	333	335	325	326	332	334	332	329	330	323	318	315	319	336	355	367	378	377	363	352	347	340	340
11		343	343	343	343	345	337	333	333	335	348	332	330	311	312	324	353	377	397	412	385	371	360	356	357	349
12		355	351	343	328	335	331	334	333	326	315	305	289	308	321	313	335	367	387	402	399	395	363	351	347	343
13	D	338	253	309	262	284	311	345	336	334	348	337	326	330	320	338	363	374	389	400	396	381	358	350	349	339
14	D	327	318	332	324	324	329	331	336	342	349	327	320	318	322	331	348	365	370	376	374	357	351	348	346	340
15		345	345	339	320	326	329	329	357	339	355	335	323	318	321	339	360	378	386	386	375	369	361	356	348	347
16		331	338	337	315	332	340	333	334	334	334	330	318	316	326	343	356	372	385	382	370	360	326	322	339	341
17		324	344	343	334	332	330	339	350	344	338	333	324	322	327	341	358	376	391	385	373	361	354	350	347	347
18		346	343	341	342	338	335	332	331	330	331	329	324	318	317	330	346	365	381	386	378	367	354	347	347	344
19	Q	345	344	342	340	336	335	336	335	335	334	334	322	313	311	323	344	361	373	377	373	366	357	350	348	343
20	Q	344	343	340	340	340	339	338	337	335	334	330	319	311	312	325	348	368	383	384	374	359	347	345	342	343
21	Q	341	340	339	339	337	331	334	337	335	333	330	324	309	302	310	339	371	385	383	372	357	346	343	341	341
22		338	337	336	332	335	333	327	330	326	331	---	---	---	---	---	---	---	---	---	---	---	---	---	350	346
23		345	342	339	---	---	---	---	---	---	---	---	---	---	---	---	---	---	392	389	390	384	383	384	346	---
24	D	308	319	259	293	312	264	238	254	281	381	392	347	355	369	364	359	370	382	387	380	368	362	353	350	335
25		349	349	347	343	340	341	328	320	323	322	353	328	320	347	365	364	375	382	382	377	365	365	362	354	350
26		351	348	348	346	329	319	341	339	330	333	331	324	318	320	332	356	397	427	408	386	373	364	355	345	351
27		348	347	332	339	340	335	307	318	325	318	336	330	313	317	326	343	362	383	407	395	371	354	355	356	344
28		355	341	316	310	322	316	345	342	342	341	339	335	325	321	328	344	369	383	386	375	358	347	343	340	343
29		337	340	340	340	343	344	344	342	341	337	331	321	312	318	332	348	370	373	367	355	345	342	341	339	342
30		340	336	344	340	337	338	---	---	---	---	---	---	---	---	---	---	---	---	---	360	344	341	342	344	---
31		345	345	343	342	339	338	334	330	329	330	324	322	315	308	322	340	361	378	377	361	346	343	343	343	340
MEAN		338	335	335	331	331	328	330	332	331	336	334	324	321	324	333	351	371	386	388	380	368	355	349	344	344
MEAN	Q	345	343	343	342	339	337	337	337	335	332	328	319	311	310	324	347	368	382	384	376	364	354	351	347	344
MEAN	D	319	296	303	299	308	303	311	315	324	355	347	335	341	340	343	354	368	384	390	384	370	355	345	337	339

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — HORIZONTAL INTENSITY

MARCH 2007 — 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
DAY																										
1		36	39	42	45	50	50	47	43	40	34	35	33	24	21	13	12	11	17	29	35	35	36	38	40	34
2		42	44	44	46	46	43	48	43	40	38	41	42	37	27	14	7	5	12	22	31	37	41	38	42	35
3	Q	44	46	47	47	46	45	46	44	45	44	44	41	32	18	8	5	9	20	30	38	43	47	47	48	37
4		48	50	50	54	53	53	52	50	53	46	47	46	39	32	20	16	16	21	30	38	42	49	49	46	42
5		33	40	53	54	54	54	53	50	48	48	50	61	53	38	23	16	21	27	33	38	28	43	41	33	41
6	D	29	43	38	41	35	45	39	41	42	43	49	48	35	28	22	18	19	24	35	43	49	49	47	31	37
7	D	19	22	36	34	43	42	55	48	46	51	45	43	35	23	12	6	18	20	16	18	22	23	23	30	30
8		36	34	39	38	35	40	40	40	37	38	39	37	31	22	12	6	12	23	29	37	44	42	42	41	33
9	Q	41	41	42	43	44	45	44	43	42	43	44	43	37	23	11	6	8	16	24	29	33	33	27	28	33
10		33	31	35	40	43	44	48	47	45	44	46	45	42	37	27	22	19	19	25	26	35	37	38	35	36
11		38	41	42	45	48	46	45	44	48	53	62	70	57	42	25	18	19	22	29	31	38	42	46	49	42
12		51	54	56	49	49	48	47	48	51	51	56	50	39	41	26	23	21	16	33	41	35	34	48	46	42
13	D	38	0	20	33	26	31	36	34	29	33	30	29	22	23	11	1	8	11	23	19	37	38	40	33	25
14	D	30	29	31	49	47	43	41	38	39	39	40	37	28	18	10	5	6	20	31	32	39	40	41	41	32
15		43	43	49	45	43	48	43	45	43	40	41	38	33	24	13	9	11	22	31	39	42	29	33	40	35
16		37	36	44	48	40	42	46	43	40	38	36	35	31	21	11	12	17	24	31	37	37	16	25	32	32
17		40	42	48	50	47	46	42	43	41	38	35	35	27	23	15	13	17	22	29	36	38	40	42	43	35
18		43	44	43	42	44	43	45	45	44	42	41	41	34	25	14	9	11	17	27	35	41	41	42	43	36
19	Q	44	44	44	44	47	44	43	43	44	43	44	42	34	21	9	5	12	23	33	38	40	41	43	44	36
20	Q	43	43	44	45	45	44	43	44	45	45	45	42	32	20	11	6	10	19	28	38	45	43	45	46	36
21	Q	47	48	49	50	49	49	47	49	48	47	46	48	43	34	20	11	16	27	36	42	45	46	47	48	41
22		48	50	49	51	52	53	49	48	45	45	---	---	---	---	---	---	---	---	---	---	---	---	41	43	---
23		43	43	43	---	---	---	---	---	---	---	---	---	---	---	---	---	---	24	28	35	36	29	25	15	---
24	D	16	10	5	9	30	30	25	40	63	39	44	31	17	4	2	2	7	8	15	25	26	30	35	41	23
25		49	49	49	48	45	38	39	36	34	32	39	43	36	11	8	3	9	14	20	28	32	29	28	31	31
26		36	37	39	42	44	43	39	43	37	35	35	35	30	23	17	5	-17	2	14	27	35	32	32	23	29
27		36	40	37	42	45	51	56	36	35	36	39	45	39	34	22	13	15	19	13	19	32	35	37	37	34
28		33	37	43	41	41	39	38	37	35	35	33	34	31	21	12	5	2	7	19	28	33	35	35	36	29
29		37	38	40	37	38	37	36	35	37	36	35	31	23	14	7	8	15	26	37	43	44	45	46	47	33
30		49	47	44	44	42	44	---	---	---	---	---	---	---	---	---	---	---	---	---	44	45	43	43	44	---
31		43	42	43	44	44	44	45	45	43	45	45	44	43	33	19	12	14	23	35	44	45	44	50	55	39
MEAN		39	39	41	43	44	44	44	43	43	41	42	42	34	25	15	10	12	19	27	34	38	38	39	39	35
MEAN	Q	44	45	45	46	46	45	45	45	45	44	45	43	36	23	12	6	11	21	30	37	41	42	42	43	37
MEAN	D	26	21	26	33	36	38	39	40	44	41	42	38	27	19	11	7	12	17	24	27	34	36	37	35	30

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — VERTICAL INTENSITY

MARCH 2007 — 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
DAY																										
1		54	56	58	57	59	66	74	76	74	72	66	68	77	79	78	75	76	77	70	63	57	55	56	57	67
2		59	60	61	62	62	64	66	71	70	68	69	69	70	73	76	78	78	77	71	63	59	54	57	58	66
3	Q	60	61	62	63	63	64	65	66	67	68	67	68	74	79	85	86	83	77	69	61	60	60	61	63	68
4		64	64	65	63	64	65	66	68	70	73	71	71	73	76	83	85	85	82	77	70	62	56	56	61	70
5		67	63	59	62	64	65	66	68	69	69	79	74	74	79	85	89	84	78	72	65	69	56	51	58	69
6	D	61	57	70	85	81	63	68	64	63	65	70	75	85	81	81	83	84	82	73	63	56	55	53	59	70
7	D	67	70	68	67	70	68	73	73	71	77	73	69	72	78	82	83	72	76	76	66	58	52	52	53	69
8		58	64	66	67	68	67	66	65	65	64	64	66	71	75	79	78	77	72	67	57	51	54	58	61	66
9	Q	64	67	68	68	68	68	69	69	68	66	66	66	69	77	85	86	83	78	72	67	61	57	61	61	69
10		59	61	61	60	62	64	64	67	68	68	68	68	69	73	78	83	87	85	78	74	61	58	58	60	68
11		62	63	63	65	65	68	71	72	68	69	72	74	79	80	88	91	87	82	74	69	61	57	61	61	71
12		62	61	62	65	68	69	70	70	68	68	66	68	80	78	82	87	91	92	78	69	65	60	54	61	71
13	D	58	70	69	69	76	71	72	66	72	76	69	68	73	69	81	87	77	74	67	66	52	52	53	56	68
14	D	60	58	61	59	63	66	68	69	70	72	68	71	77	79	80	84	83	74	69	67	61	60	62	64	69
15		64	65	62	65	67	66	71	75	74	77	77	74	74	76	80	83	80	73	67	61	57	63	62	61	70
16		62	64	64	65	66	70	69	69	70	70	71	71	73	78	84	83	82	78	71	64	61	65	63	61	70
17		60	63	63	67	68	70	72	75	74	74	75	73	76	76	80	81	80	78	72	64	62	62	64	65	71
18		65	67	68	69	67	68	67	68	70	72	73	71	72	76	81	85	85	83	75	67	63	64	66	66	71
19	Q	67	68	69	69	68	70	70	70	70	71	71	71	72	77	84	85	82	76	70	65	64	65	65	65	71
20	Q	68	69	69	69	69	70	70	69	70	69	69	69	72	78	84	87	84	79	71	64	59	63	64	66	71
21	Q	68	69	70	70	71	72	72	71	72	72	72	71	71	75	82	88	89	82	74	66	63	64	67	69	73
22		70	71	72	72	72	72	74	74	74	74	---	---	---	---	---	---	---	---	---	---	---	---	67	68	---
23		70	70	71	---	---	---	---	---	---	---	---	---	---	---	---	---	---	83	79	69	62	64	65	60	---
24	D	61	62	68	71	73	101	98	93	101	110	101	85	79	82	79	75	73	76	73	66	63	60	58	58	78
25		57	61	65	67	70	74	76	75	74	77	89	78	76	89	88	80	76	72	67	60	58	60	64	62	71
26		59	61	63	64	66	70	75	73	76	73	71	69	72	78	82	86	101	87	76	64	57	58	58	62	71
27		58	58	60	63	64	65	79	83	77	72	81	81	75	76	81	85	84	83	87	79	63	60	60	62	72
28		64	63	64	69	71	75	74	73	73	72	73	72	71	73	76	80	82	78	68	61	58	60	62	63	70
29		65	66	67	70	71	71	71	71	71	70	70	70	73	78	82	81	79	73	66	65	66	67	69	69	71
30		69	70	73	72	72	71	---	---	---	---	---	---	---	---	---	---	---	---	---	60	60	65	68	70	---
31		71	72	72	71	70	71	70	71	73	73	72	75	74	78	83	86	87	80	70	63	63	68	67	67	73
MEAN		63	64	66	67	68	69	71	72	72	73	73	72	74	77	82	84	83	79	72	65	60	60	61	62	70
MEAN	Q	65	67	67	68	68	69	69	69	69	69	69	69	72	77	84	87	84	78	71	65	61	62	64	65	70
MEAN	D	61	64	67	70	73	74	76	73	75	80	76	74	77	78	81	83	78	77	72	66	58	56	56	58	71

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — TOTAL INTENSITY

MARCH 2007 — F = 35500 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
DAY																										
1		116	116	116	119	120	114	106	102	102	100	105	103	90	87	84	85	84	86	99	108	113	115	116	116	104
2		116	115	115	116	115	111	113	106	105	106	107	107	104	95	85	80	79	84	94	106	113	119	115	117	105
3	Q	116	116	116	115	114	113	113	111	111	109	110	107	97	85	75	72	77	88	101	112	115	117	116	115	105
4		115	115	115	118	118	117	115	112	113	106	108	108	102	96	83	79	79	85	94	104	113	122	122	115	106
5		104	111	122	120	119	117	115	113	110	110	103	113	109	97	83	76	83	91	99	108	99	119	121	111	106
6	D	107	117	104	93	93	114	106	111	113	111	110	106	90	90	86	82	82	86	100	113	122	123	123	109	104
7	D	96	95	104	104	107	108	111	107	108	106	106	108	101	88	79	75	91	89	87	96	105	110	110	114	100
8		113	107	108	106	104	108	108	109	108	109	109	107	100	91	82	79	83	94	102	114	123	120	116	113	105
9	Q	111	109	108	109	109	109	108	108	108	110	111	111	104	90	77	73	76	85	95	102	108	112	106	106	102
10		111	108	110	114	114	112	115	111	110	109	110	110	107	101	91	84	80	81	91	94	109	114	114	110	104
11		111	111	112	113	113	110	107	106	111	113	116	118	107	99	82	75	79	85	96	101	111	117	116	118	105
12		118	121	121	115	112	111	109	110	113	113	117	112	97	99	87	82	77	74	95	107	107	110	123	116	106
13	D	114	83	95	102	92	100	101	105	98	96	101	101	92	97	80	69	82	85	98	96	118	119	119	113	98
14	D	108	109	108	120	114	110	107	105	105	103	106	102	93	85	80	74	75	90	101	103	112	113	113	111	102
15		112	111	116	112	109	112	106	104	104	99	100	101	98	91	82	77	80	92	103	112	117	104	108	112	103
16		110	108	112	114	108	106	109	107	105	104	102	101	98	88	77	78	82	89	99	108	111	95	103	108	101
17		113	112	115	113	111	109	105	103	102	101	98	99	92	90	83	81	84	88	98	107	110	111	111	111	102
18		111	110	109	108	110	109	110	109	107	104	103	105	101	92	81	75	76	82	94	104	111	111	109	110	102
19	Q	110	109	108	109	111	108	107	107	107	106	107	106	100	88	76	73	79	91	101	108	110	110	111	111	102
20	Q	109	108	109	109	108	108	107	108	108	109	109	107	99	87	77	71	76	86	97	109	117	113	113	111	102
21	Q	111	110	110	111	110	108	108	110	108	108	107	109	106	97	84	74	76	88	100	110	114	114	112	111	104
22		109	110	109	110	110	111	107	106	104	105	---	---	---	---	---	---	---	---	---	---	---	---	108	109	---
23		107	107	106	---	---	---	---	---	---	---	---	---	---	---	---	---	---	85	91	103	110	104	101	99	---
24	D	99	95	87	87	97	74	73	87	93	72	82	87	85	75	76	79	84	82	89	100	103	108	112	116	89
25		121	117	114	112	108	101	100	99	98	95	89	100	98	73	72	76	82	89	97	107	110	108	103	106	99
26		112	110	110	112	110	107	100	104	99	99	101	103	98	89	82	72	48	69	85	102	113	111	110	102	98
27		112	114	112	112	113	116	107	92	97	101	96	99	100	96	86	77	79	83	76	86	107	111	112	110	100
28		106	109	112	106	105	100	100	101	100	100	99	100	99	92	85	77	73	80	95	106	111	111	109	108	99
29		108	107	107	104	103	103	102	101	103	103	102	101	93	84	77	78	83	95	106	111	111	110	109	110	101
30		111	109	105	106	104	106	---	---	---	---	---	---	---	---	---	---	---	---	---	116	116	112	108	107	---
31		106	105	105	107	107	107	108	107	104	105	106	103	103	95	82	76	77	87	102	113	114	109	113	116	102
MEAN		110	109	110	110	109	108	106	105	105	104	104	105	99	91	81	77	79	86	96	106	112	112	112	111	102
MEAN	Q	111	111	110	110	111	109	108	109	108	108	109	108	101	90	78	73	77	87	99	108	113	113	111	111	103
MEAN	D	105	100	100	101	101	101	100	103	103	98	101	101	92	87	80	76	83	86	95	102	112	115	115	113	99

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — DECLINATION EAST

APRIL 2007 — 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
DAY																										
1	D	342	326	271	275	320	310	350	321	326	350	334	325	357	373	361	371	392	399	399	390	365	362	244	328	341
2	D	280	288	331	269	292	257	312	333	338	354	356	362	352	346	355	367	382	389	392	345	358	354	325	295	335
3		303	340	337	335	320	324	344	355	357	346	336	328	319	320	330	349	378	410	384	368	357	352	350	342	345
4		334	293	309	306	300	331	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	347	338	324	---
5		334	341	346	343	340	342	338	349	341	336	334	328	325	325	337	357	375	380	378	369	358	350	345	345	346
6		336	340	347	343	343	341	340	339	348	339	335	331	322	324	333	348	362	372	373	364	355	351	343	340	345
7		342	316	320	329	337	340	342	341	339	337	335	330	324	323	329	342	359	374	374	363	349	344	343	341	341
8	Q	340	341	340	340	341	340	340	338	339	336	333	322	311	310	320	337	354	367	369	360	349	345	343	339	340
9		337	334	338	335	330	317	312	323	324	320	325	329	323	319	324	338	353	364	370	363	353	348	342	339	336
10		333	328	333	337	337	336	333	330	330	333	329	322	319	317	329	349	365	377	374	364	356	353	344	342	340
11		348	335	332	333	335	333	329	335	338	336	332	328	318	315	324	343	360	369	371	361	349	344	341	339	339
12		340	339	337	330	327	327	330	331	329	327	354	363	363	348	355	355	369	378	380	368	354	348	343	344	347
13	Q	344	343	341	339	339	337	341	339	339	338	336	330	323	326	340	355	365	367	368	357	347	343	341	340	343
14		340	339	338	336	334	332	334	337	337	336	333	329	321	322	332	349	363	367	358	348	342	340	339	307	338
15		318	326	310	298	319	326	324	328	325	324	324	329	319	321	340	362	369	365	360	354	349	346	343	341	334
16	Q	340	339	339	337	338	338	337	337	336	335	332	329	323	322	333	352	368	369	359	348	342	340	337	336	340
17		336	336	335	334	334	332	332	332	331	334	349	359	359	343	351	368	378	391	401	385	363	356	351	320	350
18		316	334	331	307	307	338	338	335	340	337	338	331	326	324	332	351	364	368	366	360	358	356	353	343	340
19		349	345	330	315	318	328	324	317	339	342	348	339	332	330	338	353	368	370	364	352	345	343	342	341	341
20	Q	327	333	325	322	327	334	338	344	339	336	334	328	321	321	328	345	355	363	360	347	339	339	340	341	337
21	Q	342	340	338	336	334	332	331	335	334	334	332	329	321	322	334	350	361	365	362	349	342	341	341	339	339
22		336	334	321	302	314	322	322	331	327	328	331	327	324	317	330	350	366	372	369	365	357	353	347	347	337
23		341	304	265	245	298	304	270	310	325	335	343	341	336	334	342	358	370	375	370	360	351	347	344	345	330
24		343	341	340	338	336	336	336	336	340	341	338	333	328	327	334	348	360	368	364	352	342	340	340	343	342
25		342	340	320	327	335	336	336	336	336	336	334	330	324	323	335	354	371	374	368	356	345	341	339	339	341
26		335	334	314	326	330	330	335	337	336	337	334	331	324	323	330	341	359	360	359	349	349	342	358	343	338
27	D	337	326	299	317	316	323	329	327	330	329	371	331	327	319	322	339	354	365	370	377	348	346	302	288	333
28	D	287	306	274	309	287	281	294	313	358	365	405	346	355	355	370	362	369	374	365	353	350	343	289	318	335
29	D	293	303	324	282	294	271	284	304	338	371	336	351	350	342	339	352	360	360	359	340	331	352	328	332	329
30		278	333	321	282	277	263	318	356	318	330	356	352	341	336	338	350	359	359	361	355	348	342	343	342	332
MEAN		329	329	323	318	322	322	328	333	336	338	341	335	331	328	337	352	366	373	371	359	350	347	336	334	339
MEAN	Q	338	339	337	335	336	336	337	339	337	336	333	328	320	320	331	348	361	366	363	352	343	342	340	339	340
MEAN	D	308	310	300	290	302	289	314	320	338	354	361	343	348	347	349	358	372	377	377	361	350	351	297	312	334

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — HORIZONTAL INTENSITY

APRIL 2007 — 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
DAY																										
1	D	53	34	-9	-6	25	34	62	51	38	15	21	32	16	10	9	6	-2	4	12	13	-4	2	-11	-2	17
2	D	-12	-5	19	34	23	18	45	33	28	26	35	30	21	11	-6	-6	-7	3	5	4	13	5	-5	8	13
3		22	24	24	45	35	32	28	31	33	31	31	35	28	21	12	3	-6	-11	12	26	29	30	33	31	24
4		24	23	18	40	42	33	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	27	26	25	---
5		29	31	33	36	37	36	34	35	35	36	36	36	31	24	17	11	14	22	27	28	31	33	34	30	30
6		29	33	35	36	39	45	39	36	34	34	33	33	31	24	18	15	15	19	24	31	31	31	29	28	30
7		25	31	37	35	40	38	37	36	36	36	37	38	34	28	21	16	14	20	28	33	34	34	35	35	32
8	Q	37	38	40	39	39	40	42	43	44	40	40	40	33	25	17	12	14	24	34	39	40	41	47	63	36
9		63	63	46	45	52	62	62	40	46	44	45	46	43	32	20	11	9	15	24	28	31	33	35	36	39
10		36	38	40	41	41	41	41	41	41	41	42	42	37	27	16	12	17	20	27	35	35	34	25	21	33
11		26	35	41	42	40	41	39	37	39	38	37	37	36	30	21	17	20	27	34	37	38	39	40	41	35
12		40	38	40	45	40	40	38	40	40	38	40	37	30	8	2	6	8	14	17	23	26	28	28	28	29
13	Q	29	29	31	31	32	33	33	31	32	32	31	31	27	19	13	14	19	25	32	35	34	34	34	35	29
14		36	37	40	42	44	43	40	39	39	38	38	36	32	24	18	20	25	34	38	41	39	37	33	22	35
15		19	25	28	23	31	37	37	34	34	35	34	32	29	22	13	9	15	23	30	33	32	32	33	34	28
16	Q	34	35	36	36	36	36	36	37	37	38	37	36	32	23	13	14	22	31	38	39	39	38	39	39	33
17		40	40	42	45	45	48	45	47	48	49	51	45	39	29	18	13	11	11	13	18	20	22	21	8	32
18		4	11	27	28	24	30	33	29	31	30	31	30	27	23	18	15	21	24	31	34	24	19	26	29	25
19		23	32	47	36	34	37	39	35	33	33	35	35	35	28	19	14	17	24	34	36	36	35	33	31	32
20	Q	31	35	37	37	36	37	37	39	39	40	40	39	34	25	18	17	20	26	34	39	40	37	33	33	34
21	Q	34	36	36	38	41	42	39	39	40	41	42	41	37	28	20	19	23	29	36	40	40	38	38	39	36
22		39	43	39	38	34	37	33	37	39	40	45	49	47	40	27	18	13	15	28	33	33	33	26	35	34
23		42	23	2	4	28	40	35	25	25	24	24	25	22	16	9	4	7	11	19	23	25	25	25	27	21
24		30	33	35	35	36	36	36	35	34	37	37	37	32	22	13	12	17	25	34	36	40	41	40	41	32
25		42	39	26	31	32	33	35	36	36	36	37	36	31	21	11	7	11	16	25	31	34	33	33	33	29
26		29	31	35	33	34	34	36	38	38	38	39	37	33	21	15	21	27	33	42	37	28	22	10	12	30
27	D	18	19	27	26	31	30	34	36	40	41	44	50	42	31	22	21	24	22	24	13	22	18	0	-31	25
28	D	-38	0	7	22	25	58	33	24	41	34	41	40	34	13	3	-8	6	8	-3	17	14	-2	-6	5	15
29	D	26	8	34	16	16	35	20	26	23	34	33	24	26	12	11	7	5	10	11	-8	-3	-9	4	-4	15
30		-5	19	18	24	48	16	19	24	38	16	16	19	22	15	10	6	3	13	19	22	20	23	23	24	19
MEAN		27	29	30	33	35	37	37	36	37	35	36	36	32	23	15	11	13	18	25	28	28	27	25	25	28
MEAN	Q	33	35	36	36	37	38	38	38	38	38	38	37	33	24	16	15	19	27	35	38	39	38	38	42	34
MEAN	D	9	11	16	19	24	35	39	34	34	30	35	35	28	15	8	4	5	9	10	8	8	3	-3	-5	17

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — VERTICAL INTENSITY

APRIL 2007 — 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
DAY																										
1	D	68	74	95	83	63	69	85	132	116	95	69	62	78	83	74	74	78	75	66	62	62	58	56	60	76
2	D	66	64	62	71	82	98	105	84	75	72	70	75	70	70	78	78	76	70	63	57	52	59	62	62	72
3		60	58	61	63	77	71	71	70	70	72	67	64	67	71	77	81	86	93	72	58	56	59	60	62	69
4		66	67	73	69	78	79	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	57	61	65	---
5		65	66	67	68	69	70	71	72	71	69	69	68	70	73	78	82	82	77	70	67	64	64	64	67	70
6		68	68	69	69	70	71	73	73	76	74	72	71	70	73	76	80	82	80	75	67	66	66	67	69	72
7		70	67	68	71	71	72	72	72	72	71	70	68	69	72	76	81	85	80	73	66	64	66	67	68	71
8	Q	69	70	70	72	73	73	73	73	73	75	73	70	71	76	81	84	83	79	73	68	68	69	68	60	73
9		66	64	79	81	77	68	71	86	81	80	80	80	78	79	81	80	80	80	74	70	67	67	66	67	75
10		68	68	70	72	73	74	75	75	76	75	74	73	74	77	81	83	81	83	78	70	68	68	69	69	74
11		69	64	63	67	70	72	76	76	76	76	75	75	74	77	83	85	83	81	76	71	69	70	69	70	74
12		71	72	73	75	75	76	76	76	76	78	82	87	85	87	83	78	80	78	76	70	65	65	65	67	76
13	Q	67	68	68	69	70	72	73	74	74	73	73	72	72	77	80	80	77	72	68	65	67	69	70	70	72
14		70	71	70	70	70	71	75	76	76	76	76	76	76	79	81	79	78	75	73	70	71	73	76	78	74
15		79	72	69	75	71	70	71	75	76	76	76	75	74	77	82	83	76	70	68	66	68	69	70	71	73
16	Q	71	72	72	72	73	73	73	73	74	74	74	76	75	79	84	83	79	72	68	68	70	72	73	74	74
17		75	75	75	73	74	73	75	75	75	78	82	89	91	91	87	87	86	82	75	67	65	64	65	70	77
18		73	69	64	74	72	73	72	73	72	72	71	71	73	75	77	78	77	75	71	68	72	76	71	68	72
19		71	70	70	78	76	77	80	82	79	77	75	72	73	77	83	85	80	74	68	65	68	70	73	75	75
20	Q	75	75	75	78	79	78	78	76	75	74	74	73	74	80	83	83	81	77	72	69	69	72	75	77	76
21	Q	77	76	77	77	77	77	79	78	77	76	76	76	75	77	81	83	80	77	73	70	70	72	73	74	76
22		75	74	75	77	80	80	82	79	77	77	78	79	77	79	88	94	93	90	77	71	73	72	74	71	79
23		68	72	79	79	65	83	101	81	79	79	78	76	75	77	81	83	80	81	74	68	67	68	69	69	76
24		69	69	70	72	73	74	76	76	78	76	75	74	75	76	82	86	84	77	71	69	69	70	72	73	74
25		73	73	77	77	76	78	77	77	77	77	76	76	76	77	81	86	85	80	72	67	67	69	71	71	76
26		74	73	72	75	75	76	76	76	77	77	77	77	76	79	82	80	82	77	71	73	80	81	83	76	77
27	D	71	70	72	73	73	74	74	73	74	75	88	82	79	80	82	84	84	86	80	85	72	71	76	90	78
28	D	75	64	69	59	72	82	89	97	88	98	98	80	76	84	82	86	77	72	79	63	64	69	66	65	77
29	D	63	72	78	79	82	103	88	74	90	91	77	80	72	75	72	77	79	74	70	77	70	75	67	65	77
30		69	70	75	66	83	98	90	98	89	89	75	69	65	67	69	73	79	72	70	67	68	68	70	71	75
MEAN		70	70	72	73	74	77	78	79	78	78	76	75	74	77	80	82	81	78	72	68	67	68	69	70	74
MEAN	Q	72	72	73	74	74	75	75	75	75	75	74	73	73	78	82	83	80	75	70	68	69	71	72	71	74
MEAN	D	68	69	75	73	74	85	88	92	89	86	80	76	75	78	78	80	79	75	71	69	64	66	66	69	76

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — TOTAL INTENSITY

APRIL 2007 — F = 35500 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
DAY																										
1	D	114	98	57	69	103	102	106	60	66	71	95	107	86	78	85	83	75	81	93	97	88	93	88	89	87
2	D	79	85	100	101	85	70	78	90	94	96	102	96	94	89	72	73	73	85	91	96	105	94	87	94	89
3		103	106	104	114	96	100	98	100	101	99	103	108	100	93	83	75	66	58	88	107	110	108	109	107	97
4		100	98	90	106	100	93	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	108	104	101	---
5		103	103	104	105	105	103	101	101	102	103	104	105	100	94	86	79	81	89	98	101	105	106	107	102	99
6		100	103	103	103	105	107	102	101	97	99	99	101	100	94	88	83	81	85	92	102	103	103	102	99	98
7		97	103	105	102	104	102	102	101	101	102	103	105	102	97	89	83	79	86	96	104	107	105	105	104	99
8	Q	104	104	105	103	102	103	104	104	104	101	103	105	100	92	83	78	80	88	100	106	107	107	111	126	101
9		122	123	101	99	106	119	117	92	100	100	100	100	100	94	85	80	79	83	93	99	103	104	105	105	100
10		105	105	105	104	104	102	102	102	101	101	103	104	100	92	82	79	83	84	91	103	104	103	97	95	98
11		98	107	112	109	105	104	100	98	99	99	100	100	99	94	84	80	83	88	97	102	105	105	106	106	99
12		104	102	103	104	101	101	99	100	100	98	95	89	87	74	73	79	79	84	87	95	101	103	102	101	94
13	Q	101	101	101	101	101	100	98	97	98	98	98	98	97	88	81	82	88	95	102	106	104	103	102	102	98
14		103	103	105	107	107	106	101	99	100	99	99	98	95	88	84	87	90	97	102	105	104	102	96	88	99
15		86	96	99	92	99	104	103	98	97	98	97	97	96	90	80	77	86	95	101	104	102	101	101	101	96
16	Q	101	101	101	101	101	101	101	101	100	100	100	98	96	88	78	80	87	98	106	107	104	102	102	101	98
17		101	101	102	106	105	107	103	105	105	104	102	92	87	82	78	76	75	79	86	95	98	100	98	87	95
18		82	90	103	95	94	97	100	97	98	98	99	99	95	91	88	84	89	92	99	103	94	88	97	100	95
19		94	100	109	96	97	98	97	92	94	95	98	101	100	92	83	77	84	93	103	107	105	102	99	96	96
20	Q	96	98	99	97	95	97	97	99	101	102	102	102	99	89	82	81	85	92	101	106	106	102	97	96	97
21	Q	96	98	97	99	100	100	97	98	99	101	101	101	99	93	84	83	87	93	100	106	105	102	101	101	98
22		101	103	100	98	94	95	91	96	99	99	101	103	104	98	84	73	71	74	92	100	99	100	94	102	95
23		108	94	77	77	103	95	77	88	90	89	90	92	91	86	78	74	78	80	90	97	100	98	98	98	89
24		100	102	102	101	101	99	98	98	95	98	99	100	97	90	80	76	81	91	101	104	106	106	103	104	97
25		104	102	91	95	95	95	97	98	97	97	98	98	96	89	80	74	76	83	95	103	104	102	101	100	95
26		96	98	101	97	98	97	98	100	99	98	99	98	97	87	82	87	88	95	106	101	91	86	78	84	94
27	D	92	93	96	95	98	96	99	100	102	102	93	101	99	92	85	83	85	82	88	77	93	92	78	49	90
28	D	57	88	87	104	95	105	85	73	91	78	83	97	97	79	74	65	80	85	74	98	96	83	83	89	85
29	D	104	85	95	85	82	75	79	93	79	84	95	88	95	86	87	81	78	85	89	72	81	74	87	85	85
30		81	93	88	99	99	68	77	73	89	76	87	95	99	93	89	84	77	89	94	98	96	98	96	96	89
MEAN		98	99	98	99	99	98	97	95	96	96	98	99	97	89	82	79	81	87	95	100	101	99	98	97	95
MEAN	Q	100	100	101	100	100	100	99	100	100	100	101	101	98	90	82	81	85	93	102	106	105	103	103	105	98
MEAN	D	89	90	87	91	93	90	89	83	86	86	94	98	94	84	81	77	78	83	87	88	92	87	84	81	87

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — DECLINATION EAST

MAY 2007 — 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
DAY																										
1		335	317	289	307	339	348	333	340	345	337	340	342	340	332	328	342	361	371	373	364	358	351	332	336	340
2	Q	342	333	329	323	339	341	343	341	342	343	340	338	332	324	326	342	357	363	360	353	347	344	342	341	341
3		338	340	339	338	339	338	348	340	336	336	335	334	332	328	331	344	356	362	361	354	352	348	345	343	342
4		341	326	324	329	333	338	338	338	338	337	337	337	329	326	333	350	359	358	354	347	343	341	340	340	339
5	Q	339	332	324	328	332	336	337	335	333	337	338	334	329	327	329	340	353	360	355	346	340	338	338	338	337
6	Q	336	333	330	332	333	334	335	336	336	336	334	331	327	321	322	337	351	353	348	339	335	335	335	334	335
7	D	333	336	327	323	329	335	334	331	327	302	299	297	315	316	325	345	374	373	360	358	353	366	369	348	336
8		344	341	337	332	293	329	326	331	334	327	331	339	336	335	343	349	362	353	358	349	326	346	347	323	337
9		334	339	332	315	325	337	338	336	336	343	343	339	336	334	341	350	359	359	353	345	344	342	342	342	340
10		342	341	336	337	337	338	339	339	339	339	338	337	334	330	332	347	359	363	358	345	342	342	346	341	342
11		341	340	338	335	333	335	333	332	335	334	335	334	332	328	331	342	352	356	348	342	339	332	335	336	337
12	Q	338	339	340	336	335	336	338	337	337	335	337	334	331	327	332	343	348	351	346	342	338	338	338	338	338
13	Q	338	338	336	326	311	322	323	327	326	329	331	335	330	328	334	346	359	361	351	344	340	337	336	337	335
14		338	337	333	334	335	335	335	335	337	337	337	333	329	326	329	345	354	354	348	344	340	339	340	336	338
15		337	323	320	321	321	326	330	326	334	333	331	330	327	330	331	341	355	358	351	342	337	340	338	337	334
16		336	335	329	329	329	333	335	337	334	336	333	333	330	327	326	337	346	351	345	338	337	340	336	343	336
17		340	334	329	303	307	317	328	335	343	339	335	334	330	326	327	335	342	347	346	347	347	348	353	363	336
18	D	364	337	328	316	326	332	325	307	317	295	307	317	316	314	324	331	348	356	356	354	351	354	349	347	332
19		341	---	---	316	---	336	322	337	339	---	350	339	332	336	---	---	342	346	355	349	341	339	336	320	336
20		268	317	326	323	323	326	322	331	332	333	336	342	335	328	336	344	350	350	342	334	339	334	324	335	330
21		333	322	321	332	332	332	335	335	335	334	333	332	329	326	331	343	351	351	344	336	331	330	332	334	334
22		334	334	326	326	330	328	325	323	322	324	324	327	321	318	322	329	339	351	354	353	366	349	376	379	337
23	D	283	320	326	315	318	323	340	322	265	279	364	405	457	427	401	371	370	376	385	399	386	352	311	305	350
24	D	259	277	307	324	351	313	337	378	366	335	341	340	343	352	356	375	382	363	361	355	314	268	314	352	336
25	D	343	323	329	336	333	324	321	289	328	339	346	363	357	348	344	351	363	366	365	357	315	342	342	326	340
26		324	333	331	323	264	265	324	312	348	359	378	381	373	372	360	359	361	354	349	343	338	340	338	333	340
27		299	314	331	328	323	324	348	340	325	360	349	346	340	335	337	345	350	348	348	339	330	340	342	326	336
28		326	332	336	326	346	338	341	340	337	341	342	340	337	337	337	343	348	350	348	343	338	337	337	337	339
29		337	338	337	336	339	344	341	339	336	336	337	334	331	331	338	343	349	354	348	342	339	338	338	339	339
30		328	327	327	326	328	334	339	342	340	339	337	335	331	328	331	343	352	356	348	339	333	333	335	335	336
31		335	334	333	335	337	338	338	338	339	339	337	337	333	331	333	341	346	350	345	337	330	329	332	338	337
MEAN		330	330	328	326	327	330	334	333	334	333	337	339	337	334	336	345	355	357	354	348	341	339	339	338	338
MEAN	Q	339	335	332	329	330	334	335	336	335	336	336	335	330	325	329	341	354	358	352	345	340	338	338	338	337
MEAN	D	316	319	323	323	332	325	332	325	321	310	331	344	357	351	350	354	367	367	365	365	344	336	337	335	339

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — HORIZONTAL INTENSITY

MAY 2007 — 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
DAY																										
1		24	26	24	13	21	30	33	26	26	26	29	31	31	25	15	7	7	9	7	12	18	18	18	20	21
2	Q	22	23	26	25	24	25	27	28	29	30	31	31	30	24	14	7	9	16	23	25	26	27	27	26	24
3		26	26	28	29	29	29	35	37	35	33	35	36	34	27	19	17	15	18	23	22	24	26	27	28	27
4		28	26	22	26	29	31	31	31	32	33	34	36	35	27	19	15	18	26	31	30	29	30	31	31	28
5	Q	29	26	24	27	29	32	32	35	33	33	35	35	34	28	19	14	17	22	28	31	30	30	29	30	28
6	Q	29	29	28	30	32	33	34	35	35	35	36	36	36	33	26	20	23	29	33	35	35	33	34	36	32
7	D	35	32	26	27	30	34	37	35	59	52	51	49	41	34	27	11	0	10	25	28	23	11	5	16	29
8		23	26	24	24	39	32	22	24	25	24	29	26	29	25	16	14	17	21	24	18	18	24	23	29	24
9		32	30	33	33	33	34	31	31	30	30	32	33	33	25	19	16	17	23	30	32	30	30	28	28	29
10		29	28	30	29	30	29	29	30	31	32	34	34	31	27	21	17	20	24	26	22	23	30	29	29	28
11		32	32	31	32	32	31	32	31	33	34	35	34	36	34	28	25	24	28	31	31	31	30	33	33	31
12	Q	33	34	32	34	34	36	33	33	33	34	35	37	37	34	27	23	23	27	31	32	33	33	33	34	32
13	Q	34	36	37	38	38	34	34	32	31	29	31	31	30	25	19	16	19	26	32	34	34	33	33	33	31
14		33	33	34	35	35	35	35	36	36	38	38	40	38	34	26	22	23	28	31	32	33	31	31	33	33
15		33	33	35	36	39	41	39	37	38	39	41	41	37	27	18	15	20	28	33	30	27	30	34	34	33
16		34	33	33	32	34	32	34	36	36	37	39	38	38	35	26	20	23	28	33	35	33	30	24	25	32
17		28	26	28	29	25	26	28	31	35	39	38	37	35	30	22	18	20	25	27	26	23	20	8	6	26
18	D	0	3	14	22	25	31	36	31	75	38	36	35	39	38	31	30	25	29	31	31	32	26	26	25	30
19		28	---	---	23	---	31	32	31	30	---	23	28	33	28	---	---	19	18	18	19	21	24	24	15	25
20		21	25	24	28	31	29	24	25	27	28	27	27	24	21	21	18	21	26	26	26	27	23	26	24	25
21		26	29	29	27	28	27	27	27	28	30	32	32	31	26	21	21	25	34	40	41	42	42	41	34	31
22		31	34	38	36	37	38	40	39	41	41	39	40	42	39	37	34	32	32	27	2	12	2	13	9	31
23	D	16	12	11	18	20	12	21	43	33	14	27	52	26	23	7	6	8	14	9	-6	-16	-67	-52	-50	8
24	D	-24	11	-16	-3	3	18	16	23	26	25	23	22	20	10	4	-5	-12	0	4	-6	-10	-6	-28	-3	4
25	D	9	21	22	13	17	31	34	32	15	18	18	15	18	17	10	1	-6	-2	-2	1	9	13	15	14	14
26		16	14	24	30	15	9	18	13	15	20	25	23	12	10	7	9	4	12	18	13	19	16	15	12	15
27		15	18	21	31	24	17	28	24	24	19	26	25	23	23	17	11	7	14	19	10	13	20	17	13	19
28		17	14	24	18	21	25	23	23	19	20	20	21	21	18	13	11	15	19	21	22	22	21	20	20	20
29		20	19	19	18	20	25	26	26	27	28	28	30	31	26	20	19	19	22	25	26	25	25	25	24	24
30		26	25	19	19	22	25	30	27	27	28	30	31	32	26	18	13	15	21	26	28	28	27	26	24	25
31		25	25	25	25	26	26	27	27	29	32	33	34	33	29	23	19	21	29	33	35	32	30	29	24	28
MEAN		24	25	25	26	27	29	30	30	32	31	32	33	31	27	20	16	16	21	25	23	23	21	21	21	25
MEAN	Q	30	29	30	31	32	32	32	32	32	32	34	34	33	29	21	16	18	24	29	32	32	31	31	32	29
MEAN	D	7	16	12	15	19	25	29	33	41	30	31	35	29	24	16	9	3	10	14	10	8	-4	-7	0	17

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — VERTICAL INTENSITY

MAY 2007 — Z =-29500 nT PLUS TABULAR QUANTITIES (UNITS 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	MEAN
1		71	72	77	83	78	77	77	84	81	74	73	73	72	70	73	80	82	79	80	73	67	67	68	68	75
2	Q	70	71	71	74	75	74	73	73	73	73	72	73	72	73	77	81	80	76	70	67	67	69	70	73	73
3		74	75	74	75	75	75	75	76	76	76	75	74	75	75	77	80	81	78	75	73	72	72	71	73	75
4		74	75	77	76	75	75	75	75	75	75	75	76	74	75	78	79	77	72	69	70	71	72	72	74	74
5	Q	76	77	77	76	76	75	76	76	77	77	75	75	75	76	78	80	79	76	73	70	71	73	75	75	76
6	Q	76	77	78	77	77	77	77	77	77	77	77	77	78	77	79	82	81	77	73	72	74	76	77	77	77
7	D	77	79	81	81	80	78	76	79	77	79	77	79	86	87	87	96	103	87	73	71	72	78	81	69	81
8		66	68	70	73	82	89	84	83	80	76	75	79	75	76	82	81	78	76	75	76	73	72	72	71	76
9		71	73	74	77	80	81	81	80	81	82	79	77	77	79	81	82	82	79	74	72	75	75	76	76	78
10		76	77	77	78	79	80	80	79	79	78	78	78	78	79	81	83	81	79	77	77	78	73	75	76	78
11		75	75	76	77	77	79	79	80	80	80	80	80	79	77	81	82	82	80	77	77	77	78	77	76	78
12	Q	77	78	79	79	80	80	82	82	82	81	81	80	80	79	81	83	82	79	76	76	77	78	78	79	79
13	Q	79	79	78	79	82	83	83	85	85	85	83	81	79	78	80	82	82	78	75	74	76	78	79	80	80
14		80	80	79	79	80	80	80	81	82	81	82	81	80	80	83	85	83	81	79	80	79	80	81	80	81
15		80	79	79	79	79	80	82	84	85	85	82	83	83	84	85	85	83	79	76	79	82	81	79	80	81
16		82	82	82	82	81	82	81	81	83	83	82	82	82	82	85	86	83	80	76	77	79	83	86	86	82
17		83	82	81	82	84	83	82	80	79	79	80	80	80	81	84	85	83	79	78	80	82	81	87	86	82
18	D	83	77	73	73	71	71	71	78	85	97	91	87	84	82	85	86	88	85	81	80	80	82	81	79	81
19		79	---	---	82	---	82	88	84	85	---	89	80	77	80	---	---	80	80	81	78	76	74	74	76	81
20		75	78	79	80	81	81	83	82	80	79	81	83	80	78	79	81	79	75	73	73	74	77	76	78	79
21		77	78	80	82	82	82	82	81	81	80	79	80	80	80	82	82	81	76	74	74	75	78	80	84	80
22		86	84	82	84	84	84	83	84	84	85	86	88	87	86	86	86	86	87	89	97	87	84	81	74	85
23	D	62	77	76	76	78	83	90	110	123	113	111	118	115	99	92	80	77	73	75	85	80	84	72	63	88
24	D	63	78	73	68	92	92	88	89	88	77	75	75	74	77	79	82	85	73	70	73	69	68	76	64	77
25	D	62	64	70	74	74	78	104	97	93	82	83	86	76	72	75	81	86	80	77	69	65	67	69	70	77
26		71	72	73	87	92	97	86	87	81	83	87	82	83	81	74	71	73	70	68	72	70	73	75	75	79
27		73	73	76	78	82	89	92	85	82	94	83	79	77	74	76	79	82	77	74	79	76	74	76	77	79
28		76	78	77	81	82	83	83	80	81	80	80	78	77	77	79	80	79	77	76	75	76	78	79	80	79
29		79	80	79	79	79	78	79	79	80	80	80	78	78	79	82	81	79	77	75	76	78	78	79	80	79
30		80	82	83	82	80	79	80	82	81	80	79	79	78	78	82	86	84	80	77	76	77	79	81	83	80
31		83	82	82	83	82	82	81	80	80	80	80	80	80	81	83	83	82	80	78	79	80	83	84	87	82
MEAN		75	77	77	79	80	81	82	82	82	82	81	81	80	79	81	82	82	78	76	76	75	76	77	76	79
MEAN	Q	75	76	77	77	78	78	78	78	79	78	78	77	77	77	79	81	81	77	73	72	73	75	76	77	77
MEAN	D	69	75	75	74	79	80	86	91	93	90	87	89	87	83	84	85	88	79	75	76	73	76	76	69	81

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — TOTAL INTENSITY

MAY 2007 — F = 35500 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
DAY																										
1		95	95	90	79	88	94	95	85	88	94	97	97	99	96	88	79	77	80	79	87	96	96	94	96	90
2	Q	95	95	96	93	92	94	95	96	97	97	98	98	98	93	84	77	79	86	95	99	100	99	98	95	94
3		94	93	95	95	95	95	98	98	97	96	98	99	98	94	88	84	82	86	91	92	95	95	97	96	94
4		95	93	90	92	95	96	96	96	97	97	98	98	99	94	87	83	88	95	101	99	98	98	98	97	95
5	Q	94	92	91	93	94	96	96	97	96	96	98	98	97	94	87	82	84	90	96	100	99	97	95	95	94
6	Q	94	93	92	94	95	95	96	97	97	97	97	97	97	96	90	85	87	94	99	101	99	96	96	97	95
7	D	96	94	88	89	92	95	98	95	110	104	106	103	93	88	84	67	56	74	94	97	94	82	77	92	90
8		99	99	96	93	95	85	83	85	89	91	95	90	95	92	82	81	85	90	91	88	90	94	94	98	91
9		100	97	98	95	93	93	91	92	90	90	93	96	95	89	84	82	82	88	96	99	96	95	94	94	93
10		94	93	94	92	92	91	91	91	93	94	95	95	94	90	86	82	84	89	92	89	89	96	95	94	91
11		97	97	95	95	95	93	93	91	93	93	94	94	96	96	89	86	86	90	94	95	94	93	96	96	93
12	Q	96	95	93	94	94	95	91	91	92	93	94	95	95	94	88	85	86	90	95	96	96	95	94	94	93
13	Q	95	96	97	97	95	91	91	88	88	86	89	91	92	90	85	82	83	90	97	99	97	95	94	93	92
14		93	93	94	95	94	94	94	94	93	95	95	96	96	93	86	83	85	89	93	92	94	92	91	92	92
15		93	94	95	95	97	97	94	92	91	92	96	95	92	86	80	78	83	91	96	92	88	91	94	93	92
16		92	91	91	91	93	91	93	93	92	93	94	94	94	92	85	81	85	90	96	96	94	89	83	84	91
17		88	88	89	90	85	87	89	92	95	97	96	95	94	90	83	80	83	89	91	88	86	84	74	73	88
18	D	72	78	88	92	96	100	102	93	112	82	86	88	93	94	88	86	81	87	92	91	92	88	88	90	90
19		91	---	---	86	---	90	86	88	87	---	80	90	95	90	---	---	85	84	83	87	89	93	93	86	88
20		90	90	89	90	91	90	85	87	90	91	88	87	88	88	87	84	87	93	95	95	95	90	92	90	90
21		91	92	91	88	89	88	88	89	89	92	93	93	92	89	84	84	88	96	102	103	102	100	98	90	92
22		87	90	94	92	92	93	94	93	94	93	91	90	92	92	90	89	87	86	82	61	75	72	81	84	87
23	D	98	83	84	88	88	79	78	74	57	55	64	72	60	71	68	78	82	88	84	66	66	33	52	60	72
24	D	75	82	71	82	66	74	76	80	82	91	91	91	91	82	77	70	64	80	85	77	78	81	62	86	79
25	D	94	99	95	87	89	93	74	78	72	83	82	78	88	91	84	75	66	74	76	84	92	93	92	90	84
26		91	89	93	85	73	65	79	76	82	83	82	85	79	79	84	87	83	89	95	89	93	89	87	85	84
27		89	90	90	94	87	77	80	84	86	73	86	89	90	92	87	81	77	85	90	81	85	91	88	84	86
28		88	84	91	84	85	86	85	87	85	86	86	87	88	87	83	80	84	87	90	91	90	88	86	86	86
29		87	85	86	85	87	90	90	90	90	90	90	93	93	90	84	84	86	89	93	93	91	90	89	87	89
30		89	87	82	84	86	89	92	87	89	90	92	93	94	91	83	77	80	86	92	93	93	91	88	85	88
31		86	86	87	87	87	88	89	90	91	93	93	94	92	90	84	82	85	90	94	95	92	89	87	82	89
MEAN		92	91	91	90	90	90	90	89	90	90	92	92	92	90	85	81	82	88	92	91	92	89	89	89	89
MEAN	Q	95	94	94	94	94	94	94	94	94	94	95	96	96	93	87	82	84	90	96	99	98	96	95	95	93
MEAN	D	87	87	85	88	86	88	86	84	87	83	86	86	85	85	80	75	70	81	86	83	84	75	74	84	83

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — DECLINATION EAST

JUNE 2007 — 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
DAY																										
1		340	332	330	324	314	305	322	329	328	326	332	331	330	327	328	334	337	337	334	333	328	327	329	332	329
2		332	331	328	330	329	328	327	324	324	329	325	325	323	322	326	332	340	342	340	336	332	330	326	334	330
3	D	336	333	325	327	329	330	328	330	334	334	336	335	333	329	330	342	343	346	351	352	334	333	340	336	335
4		322	333	328	311	314	323	332	331	332	334	332	330	329	327	332	338	339	340	340	340	332	335	336	336	331
5	Q	335	334	332	332	333	332	330	330	333	334	334	333	330	328	331	336	344	343	338	337	334	331	332	330	334
6	Q	336	334	334	333	333	333	333	334	336	335	334	332	328	326	328	335	341	343	340	334	332	331	333	333	334
7	Q	334	327	331	332	332	332	333	333	335	335	334	331	328	326	330	339	347	347	339	333	330	328	328	328	333
8		331	332	331	327	330	318	328	331	330	329	329	328	324	320	319	328	343	348	346	346	349	349	326	338	332
9		337	333	318	303	307	312	320	324	353	315	326	330	331	331	330	337	345	351	342	335	333	323	320	333	329
10		320	324	325	287	306	319	325	---	---	---	---	---	---	---	---	336	339	341	---	---	---	---	---	---	---
11	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
13		---	---	---	---	---	332	334	333	328	328	327	330	333	327	328	333	340	342	340	340	343	336	332	330	---
14	D	331	320	325	325	320	286	239	243	284	305	330	362	336	336	341	345	362	361	358	349	349	353	351	318	326
15		332	335	329	322	303	275	294	318	332	332	335	340	341	339	340	345	348	349	341	334	330	329	332	335	330
16		338	340	339	322	321	324	329	331	331	333	331	330	347	348	338	346	351	353	339	335	334	335	336	334	336
17		323	327	325	330	326	323	327	321	323	326	330	327	336	336	339	349	349	---	341	330	328	---	---	---	331
18		---	---	---	---	---	331	---	---	---	---	---	---	---	330	333	339	343	345	341	334	331	328	329	332	---
19		---	309	---	---	---	---	---	---	---	---	---	---	---	330	338	343	346	345	336	330	328	328	328	330	---
20		332	332	330	330	328	329	331	332	333	331	---	333	331	---	---	---	---	---	---	---	330	---	---	331	---
21	D	330	330	329	321	308	325	315	---	318	---	322	325	328	339	---	---	355	361	---	---	---	---	---	---	---
22	D	---	---	292	295	309	324	346	338	334	341	358	361	341	336	339	342	341	340	336	333	331	341	324	340	333
23		330	266	288	309	324	311	323	333	353	337	335	334	334	335	338	344	346	347	341	334	334	333	315	312	327
24		324	324	320	330	337	340	337	331	335	331	335	338	336	335	338	341	347	350	344	339	333	328	332	336	335
25		329	329	329	333	331	331	333	331	333	332	332	330	331	330	332	335	340	343	336	330	326	326	319	327	331
26		329	330	330	331	330	331	330	330	329	330	330	333	334	329	329	334	339	340	337	329	325	328	328	329	331
27		329	330	308	317	322	325	327	324	330	330	329	331	329	329	332	341	346	343	336	331	328	329	329	324	329
28		312	316	329	328	325	318	315	316	318	322	325	329	327	326	332	335	341	341	334	328	325	325	333	335	327
29	D	332	329	330	326	327	329	330	331	331	329	328	327	327	325	320	328	336	336	331	339	350	346	332	332	331
30		331	327	319	304	304	326	329	333	334	336	334	334	332	330	331	336	339	340	335	329	326	327	328	330	329
MEAN		---	---	---	---	---	322	324	---	---	---	---	---	---	---	332	339	344	345	---	---	---	---	---	---	---
MEAN	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	D	332	327	320	319	319	319	312	---	320	325	335	342	333	333	334	343	347	349	344	342	---	342	339	329	331

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — HORIZONTAL INTENSITY

JUNE 2007 — 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
DAY																										
1		16	15	22	26	24	28	26	28	32	33	35	33	32	29	25	24	27	29	30	29	36	36	35	32	28
2		33	35	35	33	33	33	35	38	35	32	38	40	41	37	32	31	32	31	34	35	36	37	35	34	35
3	D	32	31	27	26	29	29	28	27	26	28	28	28	29	30	28	25	27	28	23	20	27	27	21	16	27
4		19	22	24	35	26	27	25	23	25	27	29	31	31	28	21	16	17	16	13	16	23	24	23	23	23
5	Q	22	23	25	23	23	23	22	21	21	23	25	27	28	25	19	16	17	24	27	28	27	25	22	24	23
6	Q	25	26	25	25	25	25	25	25	26	29	30	31	31	27	22	20	22	26	29	30	29	28	26	26	26
7	Q	25	23	23	22	24	25	25	27	28	30	30	30	30	27	22	22	24	28	31	34	35	33	33	34	28
8		32	31	28	19	20	24	25	25	27	28	30	31	35	34	29	22	16	16	14	14	7	2	1	10	22
9		11	10	12	3	8	12	18	17	26	31	20	27	26	19	16	15	17	21	21	24	22	18	21	22	18
10		23	19	21	21	20	21	24	---	---	---	---	---	---	---	---	16	15	17	---	---	---	---	---	---	---
11	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
13		---	---	---	---	---	26	28	30	31	31	32	32	32	31	27	24	23	23	21	25	30	26	27	26	---
14	D	28	15	12	22	21	28	21	21	17	20	20	27	27	27	23	23	21	21	25	25	25	21	5	19	21
15		15	14	17	19	25	30	16	15	15	18	21	23	23	22	22	19	18	26	29	30	29	27	25	19	22
16		18	18	25	30	26	20	19	21	20	23	24	23	23	26	22	19	19	20	23	23	20	17	17	18	21
17		17	17	19	20	19	20	20	24	21	20	20	19	18	24	22	18	20	---	30	28	26	---	---	---	22
18		---	---	---	---	---	20	---	---	---	---	---	---	---	28	25	23	22	22	23	25	25	24	22	21	---
19		---	18	---	---	---	---	---	---	---	---	---	---	---	21	17	16	15	22	25	26	25	24	24	23	---
20		22	21	21	20	19	20	20	22	21	22	---	25	25	---	---	---	---	---	---	---	27	---	---	25	---
21	D	26	26	25	22	17	20	28	---	28	---	38	36	37	33	---	---	28	30	---	---	---	---	---	---	---
22	D	---	---	18	6	7	12	15	23	23	19	16	24	30	22	19	19	22	24	25	24	24	6	6	8	16
23		5	21	8	-2	11	15	16	14	13	20	19	18	20	19	17	14	14	17	20	18	12	13	17	8	14
24		15	9	15	16	20	22	22	24	24	22	22	22	24	18	21	21	17	18	22	21	12	14	12	9	19
25		9	19	16	17	18	20	19	18	19	21	21	23	23	21	20	20	20	21	23	24	22	18	19	21	20
26		22	22	22	22	22	22	22	22	24	25	27	26	23	20	18	19	21	23	23	25	25	22	21	21	22
27		21	21	12	13	16	21	31	21	22	23	24	24	23	22	19	18	19	23	26	26	25	23	19	15	21
28		14	18	21	24	26	25	24	23	22	23	21	20	22	22	18	20	22	26	29	29	29	27	23	23	23
29	D	21	22	24	24	25	24	24	23	25	26	24	24	24	26	35	39	40	45	45	34	19	16	21	22	27
30		23	20	15	11	12	17	17	17	16	17	20	20	19	19	15	13	15	20	26	28	26	24	23	20	19
MEAN		---	---	---	---	---	23	23	---	---	---	---	---	---	---	22	21	21	24	---	---	---	---	---	---	---
MEAN	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	D	21	20	21	20	20	23	23	---	24	25	25	28	30	28	25	26	28	30	29	26	---	18	12	10	23

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — VERTICAL INTENSITY

JUNE 2007 — 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
DAY																										
1		89	87	83	81	84	83	83	82	80	81	82	84	84	84	85	85	82	81	81	83	80	80	82	86	83
2		85	84	84	85	85	84	82	81	83	87	83	83	83	85	86	87	85	86	85	83	83	82	84	87	84
3	D	87	87	87	87	85	84	85	86	87	86	85	84	83	82	83	86	86	83	86	89	80	80	83	86	85
4		82	82	83	82	90	86	85	85	84	84	82	81	82	82	84	86	84	85	86	82	77	77	80	80	83
5	Q	82	82	81	83	84	84	84	84	84	83	82	81	81	80	81	83	83	81	79	79	80	80	83	82	82
6	Q	82	83	84	84	84	84	84	84	84	83	82	81	82	82	83	83	82	81	79	79	81	81	83	83	82
7	Q	84	85	85	86	84	84	84	84	84	83	83	83	83	83	85	85	85	83	81	80	80	82	83	84	83
8		85	86	87	90	93	86	83	85	85	84	84	83	81	81	83	88	92	89	87	86	88	87	83	78	86
9		77	78	79	83	82	81	80	85	85	84	91	86	83	83	80	82	81	79	79	78	80	82	82	80	82
10		80	83	87	88	88	83	80	---	---	---	---	---	---	---	---	84	83	81	---	---	---	---	---	---	---
11	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
13		---	---	---	---	---	84	84	85	85	84	84	85	85	84	83	84	84	84	86	85	83	85	84	85	---
14	D	85	87	86	81	82	85	103	101	100	91	97	98	84	85	87	84	86	86	82	82	81	84	89	83	88
15		84	84	82	82	84	89	95	91	88	86	85	86	88	86	84	85	84	80	79	80	82	85	87	90	85
16		90	89	86	87	89	89	87	86	86	86	86	87	91	91	86	87	86	84	82	81	83	85	85	84	86
17		84	85	85	85	84	85	86	84	86	86	86	87	90	87	84	86	84	---	79	80	83	---	---	---	85
18		---	---	---	---	---	87	---	---	---	---	---	---	---	85	86	87	87	84	85	82	82	82	83	84	---
19		---	85	---	---	---	---	---	---	---	---	---	---	---	86	86	87	88	83	80	80	81	82	83	84	---
20		85	86	86	87	87	87	87	86	87	85	---	84	84	---	---	---	---	---	---	---	86	---	---	86	---
21	D	86	87	88	89	91	91	90	---	86	---	84	88	88	93	---	---	90	87	---	---	---	---	---	---	---
22	D	---	---	83	88	85	84	94	95	89	89	95	91	78	81	84	85	84	85	84	86	85	94	90	84	87
23		83	79	90	91	88	93	91	91	91	81	82	83	82	82	84	85	85	83	83	84	88	86	84	87	86
24		82	84	83	83	84	86	84	83	86	87	87	86	84	87	86	85	88	87	83	84	89	85	85	87	85
25		86	83	84	84	84	84	85	85	85	84	84	84	83	84	85	85	86	87	86	85	86	88	88	87	85
26		86	86	86	86	86	87	86	87	86	85	85	87	88	87	86	86	85	83	84	84	85	87	89	88	86
27		88	87	89	88	87	87	87	90	87	86	86	86	86	86	86	87	87	86	83	83	85	87	90	90	87
28		89	89	87	86	86	88	89	90	91	90	90	88	86	86	89	88	87	87	85	85	87	89	93	92	88
29	D	91	89	87	87	88	88	88	89	89	89	89	89	89	88	84	83	86	85	86	96	103	100	92	90	89
30		90	90	91	93	94	92	91	88	88	88	86	87	87	87	87	88	86	85	83	82	84	87	89	90	88
MEAN		---	---	---	---	---	86	87	---	---	---	---	---	---	---	85	86	85	84	---	---	---	---	---	---	---
MEAN	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	D	87	86	86	86	86	86	92	---	90	88	90	90	84	86	87	86	86	85	85	88	---	90	90	88	88

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — TOTAL INTENSITY

JUNE 2007 — F = 35500 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
DAY																										
1		76	77	84	88	85	87	87	88	92	93	92	90	90	88	84	84	88	90	91	88	95	94	92	87	88
2		89	91	91	89	89	89	92	95	92	87	94	95	95	91	88	86	88	87	89	92	92	93	90	88	91
3	D	87	86	84	83	87	88	86	85	84	85	85	87	88	90	88	83	85	88	82	78	90	90	84	78	85
4		83	85	85	93	80	85	84	83	85	86	89	91	90	88	83	79	80	79	76	82	90	90	87	87	85
5	Q	86	86	87	85	84	84	83	83	83	85	87	89	89	88	85	81	81	87	91	91	90	88	85	86	86
6	Q	87	87	86	85	86	85	85	85	86	88	90	91	90	88	84	83	85	88	91	92	90	89	86	87	87
7	Q	85	83	83	82	84	85	85	87	87	89	89	89	89	87	82	83	84	88	91	93	94	91	91	90	87
8		89	87	84	77	74	83	86	84	86	87	88	89	93	92	88	81	74	76	77	77	72	70	72	82	82
9		83	81	82	74	77	80	85	80	85	88	77	85	87	82	84	81	84	87	87	89	87	82	84	87	83
10		87	83	80	80	79	84	88	---	---	---	---	---	---	---	---	80	80	83	---	---	---	---	---	---	---	---
11	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
13		---	---	---	---	---	86	87	87	87	89	89	88	88	89	87	84	84	84	81	84	89	85	86	85	---
14	D	86	78	76	86	85	86	67	69	67	76	72	75	87	85	82	84	81	81	87	86	87	82	70	83	80
15		79	78	83	83	86	83	72	74	76	80	82	83	81	81	84	81	82	88	92	91	89	86	83	77	82
16		76	78	84	85	82	78	79	81	81	83	83	82	79	80	81	79	80	82	86	86	83	80	79	81	81
17		80	80	81	82	82	82	81	85	81	80	81	80	76	82	83	79	83	---	92	90	87	---	---	---	83
18		---	---	---	---	---	80	---	---	---	---	---	---	---	86	83	82	82	84	83	87	87	86	84	83	---
19		---	80	---	---	---	---	---	---	---	---	---	---	---	82	79	77	76	84	88	89	88	86	85	84	---
20		83	81	81	80	79	80	80	82	81	83	---	85	86	---	---	---	---	---	---	---	85	---	---	83	---
21	D	84	83	82	79	74	77	82	---	85	---	92	88	89	83	---	---	82	85	---	---	---	---	---	---	---
22	D	---	---	82	71	74	78	71	75	80	78	71	79	93	86	81	81	83	84	85	83	84	66	69	76	78
23		75	87	71	64	74	72	74	73	73	85	84	82	84	83	80	78	78	81	83	81	75	76	81	74	78
24		81	76	80	81	82	82	84	85	83	81	81	82	84	79	81	82	77	79	84	83	73	78	77	74	80
25		75	83	80	81	81	83	81	80	81	82	83	84	84	83	82	82	80	80	83	84	81	78	78	80	81
26		82	82	82	81	82	81	82	81	83	84	85	83	81	79	79	80	82	84	84	85	84	81	79	80	82
27		80	80	73	75	78	80	86	78	81	83	83	82	82	82	80	79	79	82	86	87	84	82	77	74	81
28		75	77	80	84	84	82	81	78	77	79	78	79	81	82	77	79	81	84	87	87	85	82	77	77	81
29	D	78	79	82	82	82	81	81	80	81	82	81	80	81	82	91	94	92	96	95	80	66	67	76	78	82
30		79	77	73	70	69	74	75	77	77	78	81	80	79	79	77	76	78	82	86	88	85	82	80	77	78
MEAN		---	---	---	---	---	82	81	---	---	---	---	---	---	---	83	81	82	85	---	---	---	---	---	---	---
MEAN	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	D	80	80	81	80	80	82	77	---	79	82	80	82	88	85	83	84	85	87	86	83	---	77	73	74	81

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — DECLINATION EAST

JULY 2007 — 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
DAY																										
1		331	330	327	324	327	327	325	327	327	326	331	332	331	332	331	335	342	343	338	331	331	331	324	334	331
2		333	330	327	328	331	330	330	330	330	335	329	327	327	327	330	338	343	343	337	331	329	329	330	329	331
3		329	329	328	---	---	327	327	---	---	---	320	321	319	317	---	349	---	---	---	331	---	---	---	---	---
4	D	---	309	---	---	---	---	306	312	---	316	370	337	---	328	337	346	348	348	337	336	336	328	328	329	328
5		329	329	315	314	308	320	328	335	329	326	326	332	331	330	331	337	342	342	336	330	326	---	327	318	328
6		---	326	327	323	317	322	330	330	332	332	331	330	330	329	334	338	343	347	341	335	327	321	330	325	330
7		320	318	296	306	314	323	326	322	328	329	332	331	329	327	329	335	342	345	339	332	329	330	326	328	327
8		334	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	337	342	340	335	331	330	330	331	---
9	Q	331	332	326	326	330	329	328	329	330	329	330	328	325	322	324	328	336	342	334	325	322	321	321	322	328
10		323	324	324	325	324	322	320	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11	D	---	---	---	---	---	---	---	---	---	---	348	331	333	339	343	352	362	353	338	335	332	333	334	333	---
12		339	337	337	331	327	321	323	342	325	328	333	334	334	339	340	345	350	352	343	336	332	330	332	334	335
13		334	333	332	327	331	334	334	335	335	332	331	330	329	329	330	333	337	342	339	329	323	321	322	325	331
14	D	327	329	330	---	328	---	321	314	304	---	325	353	361	376	372	388	378	358	358	339	356	349	355	344	343
15		225	276	280	295	311	278	293	298	326	332	330	332	327	325	328	330	337	339	338	328	326	326	328	325	314
16		311	320	327	325	332	323	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
18	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
20	D	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
21		---	---	---	---	---	---	---	---	---	---	---	---	---	---	334	337	339	340	335	332	332	330	328	---	---
22		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
25	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
26		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	332	---	---	---	---	---	---	---	---
27		---	---	---	---	---	---	---	---	---	---	---	---	---	---	332	335	335	343	---	---	---	---	---	---	---
28		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	338	345	348	338	---	---	---	327	327	---
29	D	327	333	326	322	272	271	282	299	306	316	---	335	333	336	331	334	339	341	336	330	334	326	292	330	320
30		318	308	303	310	297	324	312	318	350	331	335	335	334	333	338	342	345	346	340	334	330	330	332	329	328
31		334	335	334	331	330	---	---	---	---	---	---	---	---	331	332	335	338	345	345	---	---	---	---	---	---	---
MEAN		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	D	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — HORIZONTAL INTENSITY

JULY 2007 — 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
DAY																										
1		21	21	23	26	23	22	20	22	25	23	22	24	29	25	20	18	18	21	26	26	22	20	19	19	22
2		19	20	22	23	23	23	22	22	24	28	26	26	26	24	19	17	22	26	29	29	28	28	27	25	24
3		25	25	25	---	---	24	25	---	---	---	34	34	35	36	---	22	---	---	---	24	---	---	---	---	---
4	D	---	7	---	---	---	---	25	13	---	23	27	20	---	24	15	7	7	5	4	8	11	14	13	14	15
5		14	12	10	13	6	9	13	16	16	16	18	18	16	15	10	8	8	14	19	18	14	---	11	3	13
6		---	11	13	15	19	14	15	16	15	19	21	22	18	16	9	10	9	9	11	13	7	7	8	9	13
7		8	12	4	5	8	10	14	15	15	18	19	19	20	19	16	12	11	14	18	18	14	3	8	1	12
8		1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	9	9	12	17	17	15	15	15	---
9	Q	15	15	15	17	17	18	19	19	19	21	22	23	21	18	14	14	14	17	24	26	26	24	23	22	19
10		22	22	22	21	22	22	20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11	D	---	---	---	---	---	---	---	---	---	---	18	14	4	2	3	-1	-4	9	14	13	11	10	9	7	---
12		3	5	6	8	16	12	6	10	11	9	11	13	14	11	7	8	11	15	18	14	13	12	10	10	10
13		10	11	12	15	13	13	13	12	13	13	14	14	15	15	14	12	13	17	21	25	27	27	26	24	16
14	D	22	22	19	---	18	---	21	21	21	---	21	43	33	15	7	-6	4	4	-26	-30	-4	3	-7	-14	10
15		-41	-26	-31	-17	-9	-2	-3	-6	-6	-4	-3	-3	0	1	-1	-2	-1	2	4	2	5	4	2	0	-6
16		2	1	0	2	5	3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
18	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
20	D	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
21		---	---	---	---	---	---	---	---	---	---	---	---	---	---	5	1	2	6	10	7	-9	-2	0	---	---
22		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
25	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
26		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	22	---	---	---	---	---	---	---	---
27		---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	-1	-2	2	---	---	---	---	---	---	---
28		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	4	8	15	21	---	---	---	19	15	---
29	D	9	16	28	30	25	19	16	19	22	22	---	30	24	15	14	10	14	16	22	22	13	5	10	5	18
30		-1	6	6	19	11	28	17	18	18	17	17	20	19	20	17	11	10	15	17	18	20	17	15	13	15
31		15	17	17	17	18	---	---	---	---	---	---	---	---	16	13	15	13	14	19	---	---	---	---	---	---
MEAN		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	D	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — VERTICAL INTENSITY

JULY 2007 — 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
DAY																										
1		90	90	89	89	90	90	90	91	91	90	90	88	86	88	91	90	90	87	84	85	88	90	90	90	89
2		90	90	90	89	89	89	90	90	89	89	89	89	89	89	90	90	87	85	83	85	86	88	89	91	88
3		91	92	92	---	---	92	92	---	---	---	89	90	91	91	---	99	---	---	---	88	---	---	---	---	---
4	D	---	85	---	---	---	---	104	95	---	91	102	92	---	84	90	94	90	89	87	83	81	80	82	82	89
5		83	86	85	85	89	88	87	88	85	84	83	85	86	85	88	89	87	84	81	82	85	---	85	87	85
6		---	84	84	84	85	88	88	87	87	84	84	85	87	87	89	89	88	88	85	83	86	86	85	84	86
7		85	85	88	88	88	86	84	84	86	85	84	84	84	84	86	88	89	89	84	84	86	91	86	88	86
8		87	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	88	87	85	83	84	86	86	86	---
9	Q	86	86	86	86	86	87	87	88	88	87	87	87	87	88	90	91	90	89	85	86	88	89	90	90	88
10		90	89	89	89	89	88	89	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11	D	---	---	---	---	---	---	---	---	---	---	105	100	87	85	82	82	86	76	75	79	83	85	86	87	---
12		87	85	82	83	85	90	90	97	87	86	85	85	85	86	86	85	84	84	83	86	87	86	88	88	86
13		88	87	86	85	87	87	87	87	87	86	86	86	86	86	85	85	86	85	83	81	83	85	88	91	86
14	D	92	92	93	---	91	---	88	88	89	---	94	98	102	107	102	102	90	83	90	86	73	71	77	77	90
15		76	77	81	72	78	83	85	81	82	80	78	78	76	74	77	79	80	79	77	77	75	76	79	80	78
16		80	81	81	80	80	83	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
18	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
20	D	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
21		---	---	---	---	---	---	---	---	---	---	---	---	---	---	80	81	86	86	82	82	90	84	81	---	---
22		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
25	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
26		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	93	---	---	---	---	---	---	---	---
27		---	---	---	---	---	---	---	---	---	---	---	---	---	---	86	86	85	84	---	---	---	---	---	---	---
28		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	90	89	88	83	---	---	---	91	92	---
29	D	94	89	84	85	91	100	93	91	93	97	---	97	98	101	96	94	90	89	86	88	94	98	92	95	93
30		97	98	95	99	99	104	105	98	103	93	92	91	92	91	93	96	96	91	90	88	89	92	94	95	95
31		95	95	95	95	94	---	---	---	---	---	---	---	---	97	97	91	90	90	88	---	---	---	---	---	---
MEAN		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	D	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — TOTAL INTENSITY

JULY 2007 — F = 35500 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
DAY																										
1		78	78	80	82	79	79	78	78	80	79	78	82	86	82	77	76	76	80	85	85	81	77	77	77	80
2		77	77	78	80	79	79	79	79	80	83	81	82	81	81	77	76	81	85	88	87	85	84	82	79	81
3		79	79	79	---	---	78	79	---	---	---	86	85	86	86	---	71	---	---	---	81	---	---	---	---	---
4	D	---	74	---	---	---	---	69	70	---	78	72	76	---	85	75	67	70	70	70	77	79	82	80	80	75
5		80	76	76	78	70	73	76	77	80	80	82	81	79	79	74	72	73	79	84	83	78	---	76	70	77
6		---	78	79	79	81	76	77	77	77	82	83	83	79	78	72	73	73	73	77	79	73	74	75	76	77
7		75	77	70	71	72	76	79	79	78	80	81	82	82	82	78	74	73	75	81	81	77	67	74	68	76
8		69	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	73	73	77	81	80	78	78	78	---
9	Q	77	78	78	79	79	79	79	79	78	80	81	81	81	78	74	73	74	76	83	85	83	81	79	78	79
10		78	79	79	79	79	80	78	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11	D	---	---	---	---	---	---	---	---	---	---	64	66	71	72	74	72	67	83	86	82	78	76	75	73	---
12		71	73	76	76	79	73	69	66	75	74	76	78	78	76	74	75	77	79	82	78	76	76	73	73	75
13		73	75	76	78	76	76	76	76	76	77	77	77	78	78	78	77	77	79	84	87	88	86	82	79	79
14	D	77	77	74	---	75	---	80	80	79	---	74	84	75	61	61	53	69	74	52	53	78	84	73	69	72
15		54	62	56	71	71	71	69	70	70	72	75	74	77	79	76	74	74	76	79	78	81	80	77	74	73
16		76	74	73	76	77	74	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
18	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
20	D	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
21		---	---	---	---	---	---	---	---	---	---	---	---	---	---	77	74	71	73	78	76	61	70	74	---	---
22		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
25	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
26		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	76	---	---	---	---	---	---	---	---
27		---	---	---	---	---	---	---	---	---	---	---	---	---	---	69	69	69	72	---	---	---	---	---	---	---
28		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	69	71	77	84	---	---	---	76	73	---
29	D	68	76	86	87	79	69	73	76	76	73	---	78	73	65	69	68	74	76	82	80	70	63	70	65	74
30		60	63	65	69	65	70	63	70	66	73	74	77	76	77	73	68	66	74	76	77	78	74	71	69	71
31		71	72	72	71	73	---	---	---	---	---	---	---	---	69	68	73	73	74	78	---	---	---	---	---	---
MEAN		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	D	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — DECLINATION EAST

AUGUST 2007 — 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
DAY																										
1	D	---	---	---	---	---	---	---	---	---	---	---	---	---	---	339	344	348	350	354	342	328	330	299	297	---
2		---	---	---	---	---	---	314	316	324	327	329	331	330	332	341	355	357	350	347	341	332	332	335	335	---
3		332	328	329	326	325	333	331	329	329	330	329	328	329	330	330	334	341	346	344	337	335	335	333	330	332
4	Q	334	332	331	330	327	328	330	329	331	331	331	331	328	324	323	329	339	345	344	340	335	333	333	334	332
5	Q	333	331	330	329	327	327	325	327	328	329	328	326	320	315	317	325	333	339	343	337	332	330	330	329	329
6	D	328	328	329	328	326	324	320	315	322	325	317	319	316	316	324	336	343	356	358	343	352	375	343	371	334
7	D	353	330	282	293	286	310	336	329	335	333	344	351	352	336	339	341	354	353	350	343	311	311	322	326	330
8		321	317	332	331	316	310	309	333	331	332	334	334	329	327	333	339	344	349	347	341	334	326	331	334	331
9		335	321	330	332	328	326	326	329	333	335	333	328	327	320	321	336	346	351	351	337	329	327	328	328	332
10	D	328	328	328	326	317	313	315	317	---	---	---	306	311	317	335	349	---	---	351	343	339	336	340	316	329
11		308	310	314	321	310	311	319	318	325	331	329	331	329	330	330	341	352	361	366	350	334	343	342	342	331
12		329	328	315	307	307	316	325	331	333	329	352	348	333	326	331	339	347	351	352	347	341	333	334	333	333
13	Q	332	331	328	321	326	328	330	330	330	331	331	330	326	318	319	333	350	362	359	345	335	330	329	329	333
14		327	316	324	324	322	322	325	320	317	323	322	321	316	311	318	324	337	350	350	341	334	332	330	330	327
15		332	319	301	310	310	259	300	314	321	323	326	331	319	324	321	327	334	349	349	344	338	329	322	322	322
16		323	305	290	290	313	318	311	312	314	343	316	324	315	311	316	324	335	342	342	345	342	337	332	325	322
17		313	309	323	324	317	324	324	327	330	333	328	325	319	315	323	332	337	341	345	340	333	329	328	326	327
18		313	321	321	316	319	324	326	328	330	330	329	326	318	309	311	325	339	347	349	342	332	327	326	327	326
19		326	327	326	324	324	324	324	324	324	323	323	321	317	313	313	332	342	347	349	343	334	329	328	327	328
20		326	324	328	327	327	327	328	328	329	330	328	325	320	316	321	331	342	348	352	345	332	329	330	329	330
21		314	309	314	322	323	322	322	321	324	323	323	318	317	316	324	334	350	355	356	344	332	329	329	329	327
22		329	327	325	327	327	325	322	323	325	326	329	331	326	322	329	339	346	352	356	351	338	330	329	329	332
23	Q	329	328	328	327	325	325	326	326	327	329	327	324	319	318	322	332	339	345	347	343	335	332	331	328	330
24	Q	327	327	327	318	323	327	328	327	327	326	324	320	313	306	313	323	334	341	341	335	330	327	327	328	326
25		328	308	304	317	314	311	310	313	320	321	313	307	316	321	325	334	342	348	353	358	350	345	339	331	326
26		321	299	309	288	303	319	327	330	337	334	324	321	318	312	319	335	---	---	357	341	---	---	---	---	---
27	D	---	---	305	---	---	318	---	---	301	322	---	---	320	317	322	333	347	356	357	362	335	338	292	256	321
28		262	297	307	294	302	315	325	355	349	377	351	327	322	317	323	338	351	356	354	348	338	333	328	318	329
29		320	---	---	323	325	326	327	329	333	330	328	325	319	311	313	326	340	345	348	344	335	333	326	319	328
30		320	315	307	311	303	320	326	332	328	327	324	322	317	310	319	331	342	---	346	346	335	335	330	331	326
31		321	321	323	324	322	320	---	---	---	---	---	---	---	---	---	---	---	358	355	347	340	338	345	350	---
MEAN		324	319	318	318	318	319	323	324	327	330	328	326	322	319	324	334	344	351	351	344	335	333	329	327	329
MEAN	Q	331	330	329	325	326	327	328	328	329	329	328	326	321	316	319	329	339	347	347	340	333	330	330	330	330
MEAN	D	---	---	---	---	---	---	---	---	---	---	---	---	---	---	332	341	350	359	354	347	333	338	319	313	---

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — HORIZONTAL INTENSITY

AUGUST 2007 — 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
DAY																										
1	D	---	---	---	---	---	---	---	---	---	---	---	---	---	---	17	13	6	10	12	2	1	-1	-5	13	---
2		---	---	---	---	---	---	23	16	18	19	21	22	22	20	15	11	12	14	21	25	22	19	17	16	---
3		16	16	16	15	13	17	22	18	19	21	23	25	25	24	18	11	11	12	16	18	17	16	12	13	17
4	Q	16	18	18	17	17	16	18	18	19	20	21	22	22	19	14	10	8	11	16	20	20	19	16	18	17
5	Q	19	22	21	21	21	22	22	23	23	25	27	28	28	24	19	18	18	18	20	23	25	23	22	21	22
6	D	21	22	23	24	25	26	29	32	34	35	31	29	33	30	22	21	24	21	28	32	29	-16	-30	7	22
7	D	8	11	42	2	-4	-1	4	14	15	5	6	6	11	8	10	13	8	-2	11	10	-4	1	-2	2	7
8		11	18	13	21	25	22	9	10	13	13	14	14	12	8	2	0	5	11	17	18	17	16	14	12	13
9		12	16	14	14	15	17	18	16	17	16	19	21	19	14	7	4	7	14	23	26	24	21	19	19	16
10	D	20	21	20	20	20	18	13	12	---	---	---	21	23	21	2	4	---	---	-5	16	11	10	0	-6	13
11		-7	-9	0	3	7	10	18	14	9	13	17	17	13	4	5	5	4	4	8	4	12	13	11	9	8
12		9	10	9	7	9	8	12	16	16	17	23	16	18	14	6	2	1	7	11	16	16	16	15	15	12
13	Q	15	14	15	15	19	17	15	15	16	18	20	23	22	15	4	-3	-3	6	13	16	18	18	17	18	14
14		17	18	19	18	18	17	19	19	17	18	21	22	23	17	8	5	4	11	18	23	23	21	25	27	18
15		25	13	16	13	17	13	12	16	19	20	22	24	25	16	13	12	14	12	17	18	14	10	11	8	16
16		4	2	-3	6	13	18	19	16	18	30	27	26	24	18	13	8	8	9	11	10	8	8	10	12	13
17		14	14	14	18	19	24	20	21	23	24	23	23	20	14	9	5	5	9	14	15	18	17	19	16	17
18		9	14	21	23	23	24	23	22	23	24	26	26	25	20	13	7	5	8	14	20	22	22	22	22	19
19		23	24	24	25	26	27	26	24	24	26	29	28	28	21	11	3	3	5	14	20	22	21	20	19	21
20		16	16	21	22	23	24	24	25	23	24	24	25	22	13	5	3	5	10	18	24	26	24	23	20	19
21		25	18	20	24	27	30	30	31	32	32	32	34	30	24	17	14	13	17	22	25	27	24	22	22	25
22		21	22	23	23	24	26	28	28	27	28	28	30	29	19	12	9	12	12	14	19	21	21	22	22	22
23	Q	22	22	22	23	23	23	23	23	23	24	25	28	27	18	11	9	9	11	15	20	21	21	21	22	20
24	Q	23	23	23	25	21	22	22	23	24	25	26	27	24	16	13	11	13	16	21	26	27	27	26	26	22
25		26	17	18	24	22	23	22	20	20	24	29	26	17	22	15	13	16	14	15	11	10	9	13	14	18
26		11	15	17	17	16	16	16	18	20	24	29	30	25	22	15	15	---	---	12	20	---	---	---	---	---
27	D	---	---	6	---	---	23	---	---	20	20	---	---	20	14	5	2	4	6	7	-5	-22	-9	2	2	10
28		-15	-13	1	2	5	12	12	16	24	13	29	23	14	-1	-6	-7	-2	2	5	5	3	-1	3	4	5
29		-2	---	---	11	11	12	12	13	14	16	19	20	20	14	7	4	3	7	12	13	11	8	9	11	11
30		9	11	22	17	16	16	16	18	19	21	22	22	17	9	2	2	6	---	10	14	13	12	14	12	14
31		17	20	20	20	25	21	---	---	---	---	---	---	---	---	---	---	---	7	15	21	18	9	0	0	---
MEAN		14	14	17	17	18	19	19	20	20	21	23	24	22	16	10	7	8	10	14	17	16	13	12	14	16
MEAN	Q	19	20	20	20	20	20	20	20	21	22	24	26	24	19	12	9	9	12	17	21	22	21	21	21	19
MEAN	D	---	---	---	---	---	---	---	---	---	---	---	---	---	---	11	10	10	7	11	11	3	-3	-7	3	---

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — VERTICAL INTENSITY

AUGUST 2007 — 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
DAY																										
1	D	---	---	---	---	---	---	---	---	---	---	---	---	---	---	100	100	102	97	92	94	92	92	90	85	---
2		---	---	---	---	---	---	93	96	94	93	92	93	95	97	102	104	97	94	89	89	90	93	93	94	---
3		93	93	94	95	95	95	95	94	93	93	92	92	95	96	96	99	100	98	94	91	92	93	94	94	94
4	Q	92	92	93	94	94	95	95	95	94	93	93	93	94	94	96	100	100	97	93	90	90	91	93	93	94
5	Q	92	92	93	95	95	95	95	95	95	95	94	93	93	95	98	101	99	98	95	93	93	96	97	97	95
6	D	97	96	95	95	96	95	94	93	95	99	99	100	98	98	104	107	105	107	101	96	99	114	108	85	99
7	D	81	80	95	113	102	95	104	114	105	100	94	93	94	91	89	91	94	100	88	89	92	91	93	90	95
8		87	88	91	91	99	104	102	102	96	93	92	92	92	93	96	95	94	93	89	88	89	90	92	94	93
9		93	92	93	92	92	93	94	96	94	95	93	91	92	93	95	98	97	93	89	88	90	93	96	96	93
10	D	95	95	96	96	95	96	98	98	---	---	---	100	101	98	107	103	---	---	100	84	90	92	97	98	97
11		97	96	91	91	89	93	95	94	96	94	92	91	93	98	95	95	97	95	91	88	84	87	90	90	93
12		90	90	90	92	92	94	94	93	93	93	98	100	96	92	94	96	95	93	91	89	90	91	92	93	93
13	Q	94	95	95	96	94	95	96	96	95	94	94	94	94	95	99	105	105	97	91	86	86	88	91	92	94
14		94	94	95	95	96	96	96	96	97	97	95	95	94	96	102	104	102	98	94	88	88	92	91	90	95
15		92	94	92	97	98	102	98	94	94	94	94	96	94	99	100	102	101	104	95	90	92	93	91	93	96
16		95	96	98	95	93	92	94	97	96	97	97	96	94	96	100	104	103	99	97	97	97	95	93	91	96
17		92	93	95	94	95	95	97	96	96	97	97	97	96	99	102	104	104	102	99	96	94	95	94	96	97
18		98	96	94	95	97	98	99	99	99	98	96	96	97	98	102	105	105	103	98	94	93	94	96	96	98
19		97	97	98	98	98	99	100	101	101	99	98	99	98	101	107	112	112	109	101	95	94	96	98	99	100
20		100	100	98	98	98	99	100	100	100	100	99	99	100	103	107	110	109	105	101	96	94	97	99	100	101
21		99	102	101	98	97	98	98	99	100	101	102	101	104	105	109	112	113	109	105	100	99	101	102	102	102
22		102	101	101	101	101	100	99	100	102	102	103	103	103	108	113	115	110	109	106	101	97	98	99	100	103
23	Q	100	100	101	101	101	101	101	101	101	102	101	101	100	102	105	107	106	106	102	98	97	99	100	100	101
24	Q	100	100	101	100	103	102	102	101	101	100	100	99	100	103	108	109	108	105	101	100	99	100	101	102	102
25		102	103	102	100	101	102	103	103	102	100	97	98	105	103	105	107	106	106	104	103	103	100	98	96	102
26		97	96	96	99	102	101	101	100	100	98	96	97	99	101	108	111	---	---	112	104	---	---	---	---	---
27	D	---	---	97	---	---	100	---	---	115	105	---	---	101	103	106	110	108	103	102	104	107	95	88	92	103
28		106	103	94	93	95	93	96	102	103	121	111	102	100	104	104	104	102	99	99	96	94	96	93	93	100
29		97	---	---	93	94	95	96	97	97	96	95	96	96	98	103	108	109	105	102	98	98	99	98	96	98
30		98	98	98	101	101	101	100	101	99	99	99	100	102	105	110	110	106	---	101	98	96	97	96	98	101
31		97	96	97	98	99	101	---	---	---	---	---	---	---	---	---	---	---	107	103	96	97	101	105	101	---
MEAN		95	96	96	97	97	97	98	99	98	98	97	97	97	99	102	104	103	101	98	94	94	95	96	95	98
MEAN	Q	95	96	96	97	97	98	98	98	97	97	96	96	96	98	101	104	104	100	96	93	93	95	96	97	97
MEAN	D	---	---	---	---	---	---	---	---	---	---	---	---	---	---	101	102	102	102	97	94	96	97	95	90	---

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — TOTAL INTENSITY

AUGUST 2007 — F = 35500 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
DAY																										
1	D	---	---	---	---	---	---	---	---	---	---	---	---	---	---	68	65	60	66	71	64	65	64	63	77	---
2		73	---	---	---	---	---	76	70	72	75	76	76	74	71	65	61	66	71	79	81	78	75	73	72	---
3		73	72	72	71	69	71	74	73	74	75	78	78	77	75	71	65	64	67	72	76	75	73	70	70	72
4	Q	74	74	74	72	73	71	72	73	73	75	75	76	76	74	69	64	62	66	73	77	77	76	73	74	73
5	Q	75	76	75	74	74	74	75	75	75	76	78	80	79	76	70	67	69	70	73	77	78	74	73	72	74
6	D	72	74	75	75	75	76	79	82	81	78	76	74	79	76	67	64	67	64	72	79	75	37	34	74	71
7	D	78	80	86	48	54	61	57	54	62	60	66	67	69	70	72	73	67	57	74	73	62	66	63	67	66
8		75	78	73	77	73	67	61	62	69	71	72	72	72	68	62	62	66	69	77	78	76	76	72	70	71
9		70	74	71	72	73	74	73	70	72	71	75	77	75	72	66	62	64	71	80	83	80	75	72	72	73
10	D	74	74	73	73	73	71	67	67	---	---	---	70	70	71	53	57	---	---	55	80	73	70	61	56	68
11		56	56	65	67	71	70	72	70	67	70	74	75	71	62	65	64	63	64	70	70	78	76	72	71	68
12		71	71	71	69	70	68	70	72	73	73	72	67	72	72	66	62	62	67	71	75	75	74	73	72	70
13	Q	71	70	71	70	73	71	70	70	71	73	74	76	75	71	61	52	52	64	73	79	80	77	75	74	71
14		73	73	73	72	71	71	72	72	70	71	74	75	75	71	61	58	59	66	73	80	81	76	79	81	72
15		78	70	73	68	69	63	66	72	74	74	75	75	77	68	65	63	64	61	72	77	72	69	72	68	70
16		64	62	58	65	71	75	74	70	72	78	75	76	76	72	65	59	59	64	67	65	65	66	69	72	68
17		73	71	69	73	72	76	71	73	74	74	73	73	72	67	61	57	57	61	67	70	73	72	74	71	70
18		64	69	75	75	74	73	72	71	72	73	76	76	75	71	64	58	56	60	67	74	76	75	74	73	70
19		73	73	73	74	74	74	73	71	71	73	76	75	75	69	59	50	49	54	64	73	75	73	71	70	69
20		67	67	72	72	72	72	72	72	70	71	72	73	71	62	55	51	53	59	67	75	78	74	72	69	68
21		72	66	68	73	76	76	76	76	75	75	74	76	72	67	60	56	54	59	66	72	74	71	68	68	70
22		68	70	70	70	71	72	74	73	72	72	72	73	71	62	54	51	56	57	61	68	73	71	71	71	68
23	Q	71	70	70	70	70	70	70	70	70	69	71	73	72	66	60	57	57	59	65	70	72	70	70	70	68
24	Q	71	71	70	72	68	69	69	70	71	72	73	74	71	65	58	57	59	63	69	72	74	73	72	71	69
25		71	65	66	71	70	69	68	66	67	72	76	74	63	68	62	59	62	61	63	61	61	62	67	69	66
26		67	70	71	69	66	66	66	68	70	74	77	77	73	69	60	57	---	---	55	66	---	---	---	---	---
27	D	---	---	64	---	---	70	---	---	57	65	---	---	68	63	55	51	54	58	60	52	40	56	69	65	61
28		45	48	64	65	65	70	68	66	69	47	65	69	65	54	51	50	55	60	62	64	64	61	65	66	61
29		60	---	---	69	69	69	68	68	69	71	72	73	73	67	59	53	52	58	62	67	66	64	64	67	65
30		64	65	72	66	66	66	67	68	70	71	71	70	65	59	50	50	56	---	63	67	68	67	69	66	65
31		70	72	72	71	73	69	---	---	---	---	---	---	---	---	---	---	---	56	64	73	70	61	53	57	---
MEAN		69	69	71	70	71	71	70	70	71	71	73	74	72	68	62	58	60	62	68	72	72	69	68	70	69
MEAN	Q	72	73	72	71	71	71	71	71	72	73	74	75	75	70	64	59	60	64	71	75	76	74	72	72	71
MEAN	D	---	---	---	---	---	---	---	---	---	---	---	---	---	---	63	62	62	60	67	70	63	59	58	68	---

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — DECLINATION EAST

SEPTEMBER 2007 — D = 14 DEGREES PLUS TABULAR QUANTITIES (UNITS 0.1 MINUTES)

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		---	329	318	322	323	321	309	281	---	---	---	---	---	310	---	324	339	349	356	357	346	342	335	350	329
2	D	289	302	317	288	261	266	313	315	332	333	370	391	333	343	340	350	356	355	370	352	351	335	331	313	329
3		319	327	325	318	307	321	315	317	323	329	329	339	348	329	325	342	357	352	356	351	347	343	318	318	331
4		329	317	313	323	327	327	330	336	339	335	332	327	319	311	315	329	341	348	348	343	333	330	327	328	329
5		300	306	326	308	307	298	288	284	339	305	317	325	323	327	325	337	351	358	359	348	339	340	331	309	323
6		312	322	313	301	312	309	312	321	324	320	325	317	319	314	320	335	355	376	383	375	364	358	354	307	331
7		338	289	277	274	300	319	324	330	332	328	324	325	318	319	325	340	361	370	363	360	347	333	332	331	328
8		330	322	314	319	322	323	336	331	326	326	333	328	318	309	315	329	355	362	372	366	350	336	337	333	333
9	Q	331	329	328	327	326	325	324	325	326	326	323	319	308	303	315	329	343	350	352	350	338	330	329	326	328
10	Q	329	328	327	324	320	323	326	326	325	324	320	314	306	307	318	332	343	351	356	350	338	333	332	331	328
11	Q	329	328	329	328	326	322	317	318	322	324	321	314	313	319	330	345	359	360	361	354	344	346	338	333	333
12	Q	334	331	326	316	320	306	302	307	308	311	311	309	307	306	312	324	336	348	357	359	344	333	329	329	324
13	Q	329	327	324	325	325	324	322	322	322	322	322	314	305	304	314	327	343	354	358	348	334	325	323	323	326
14		320	320	321	322	322	320	320	320	321	320	317	308	300	298	306	325	342	352	359	354	341	336	330	325	325
15		321	314	310	320	322	326	327	328	326	325	324	319	310	307	311	328	345	356	357	348	332	327	326	325	326
16		324	323	318	319	317	322	325	325	327	326	323	314	305	299	303	321	346	370	376	358	335	325	325	325	327
17		326	327	328	328	328	329	328	327	327	325	321	311	303	303	309	330	360	376	369	350	330	319	321	323	329
18		318	322	289	298	315	320	321	324	325	324	318	312	307	313	323	345	360	369	366	356	343	335	332	330	328
19		330	325	322	321	319	322	310	315	319	318	318	315	304	302	316	336	358	365	364	357	345	336	333	331	328
20		328	327	326	325	324	321	317	315	315	314	309	304	290	293	310	336	356	377	401	418	388	360	354	304	334
21		277	302	317	323	325	322	314	317	316	320	320	313	300	298	321	333	349	362	366	356	342	340	342	338	325
22		324	276	304	319	318	313	319	327	334	324	322	312	306	310	321	339	353	358	359	358	350	329	340	333	327
23	D	306	308	318	316	300	258	247	302	330	318	322	329	332	326	330	340	354	360	363	361	345	333	257	308	319
24		307	317	302	310	296	272	301	303	322	313	313	308	316	326	335	345	356	364	364	360	351	335	336	329	324
25		300	302	318	322	321	322	321	326	328	323	316	308	308	313	325	339	354	364	364	356	339	330	331	334	328
26		325	314	319	321	319	322	323	324	323	322	321	318	313	314	322	339	359	366	364	355	341	332	332	333	330
27	D	332	328	327	325	324	323	322	321	320	317	314	308	296	295	306	330	384	396	377	373	380	360	363	341	336
28	D	260	250	269	282	319	322	315	310	338	305	300	309	313	317	322	340	362	364	358	354	347	352	252	339	317
29	D	295	310	280	312	290	285	302	297	341	332	333	334	334	345	357	366	375	372	363	350	319	338	306	285	326
30		305	320	328	330	329	339	324	345	354	333	329	323	312	314	324	339	359	367	373	347	339	330	332	332	334
MEAN		316	315	314	316	316	314	315	318	326	322	322	320	313	312	320	336	354	362	365	357	345	337	328	326	328
MEAN	Q	330	329	327	324	324	320	318	319	321	321	319	314	308	308	318	331	345	353	357	352	340	333	330	329	328
MEAN	D	296	300	302	305	299	291	300	309	332	321	328	334	322	325	331	345	366	369	366	358	349	344	302	317	325

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — HORIZONTAL INTENSITY

SEPTEMBER 2007 — 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
DAY																										
1		---	20	23	20	19	17	28	18	---	---	---	---	---	21	---	11	8	7	9	8	3	9	11	1	15
2	D	-4	-16	-3	21	-2	-1	3	5	10	13	2	16	19	12	-7	-9	-8	-1	-1	-12	3	7	9	4	3
3		6	10	18	27	19	25	15	14	9	10	13	15	12	12	6	-8	-5	6	11	11	11	5	-4	4	10
4		9	14	16	13	18	16	15	16	18	16	15	17	15	11	4	2	3	6	8	11	13	13	11	11	12
5		7	4	8	12	25	29	20	10	17	12	11	20	14	9	5	0	2	9	10	4	4	6	7	5	10
6		8	4	17	4	7	6	6	7	9	10	16	14	12	5	-5	-13	-17	-19	-10	0	3	5	-23	-23	1
7		-6	1	4	-8	8	5	5	6	4	6	5	7	5	-5	-10	-16	-17	-16	-6	4	6	9	10	12	1
8		10	8	9	6	9	9	11	15	12	12	11	15	16	8	-4	-11	-14	-4	3	4	5	9	8	9	7
9	Q	11	12	14	14	15	15	15	14	14	15	18	22	20	13	2	-1	1	4	9	16	18	16	15	15	13
10	Q	15	15	14	13	13	12	13	16	17	18	20	21	18	12	3	0	0	1	6	15	15	16	17	17	13
11	Q	18	18	19	19	18	16	17	13	14	19	22	22	14	4	-3	-2	1	8	12	17	16	15	14	15	14
12	Q	16	17	14	10	11	11	11	14	15	17	20	23	22	15	6	-1	0	4	9	15	18	17	16	18	13
13	Q	19	20	20	21	21	21	22	22	22	23	26	26	20	7	-2	-3	2	7	16	25	28	25	24	21	18
14		20	22	24	25	25	24	25	24	24	27	29	30	25	14	7	6	8	18	27	33	37	33	25	23	23
15		25	23	25	23	21	18	16	16	17	20	23	24	20	12	5	0	3	7	18	23	23	19	15	17	17
16		17	12	15	18	23	22	22	22	22	21	23	24	21	15	3	-5	-7	1	9	21	25	22	21	21	16
17		21	22	22	22	22	22	23	22	22	24	25	22	14	2	-4	-8	-5	2	12	20	23	25	24	22	16
18		20	28	30	22	22	21	21	20	20	20	23	20	13	4	-4	-10	-4	3	10	17	21	20	20	21	16
19		21	21	20	23	24	31	26	22	22	22	24	27	25	14	1	-3	0	7	16	18	19	20	20	21	18
20		22	22	24	24	24	26	26	25	25	24	30	36	33	21	7	-3	-6	3	5	2	-1	4	11	-9	16
21		5	6	12	14	19	24	21	21	22	19	19	18	16	12	3	1	4	9	13	19	20	12	-1	10	13
22		11	1	13	17	19	23	20	17	22	23	18	18	9	5	-2	-5	-3	2	9	16	-14	3	7	13	10
23	D	15	27	17	22	21	37	17	10	6	9	13	6	3	3	-1	-4	-1	3	10	12	8	4	-3	6	10
24		3	14	12	19	18	23	13	16	16	13	13	11	2	1	-7	-7	-6	-3	8	14	15	13	15	13	10
25		2	11	10	13	17	16	12	11	14	14	13	9	5	2	-1	-4	-1	1	11	14	1	3	12	11	8
26		13	18	14	15	20	19	17	15	15	16	15	14	9	2	-5	-10	-4	5	13	18	18	16	16	17	12
27	D	17	18	18	20	19	18	18	18	18	17	17	16	17	13	9	5	-9	-1	12	25	0	-1	7	7	12
28	D	7	2	-3	-1	12	17	16	8	16	17	10	3	-2	-6	-7	-3	2	5	12	0	-8	-4	-17	-6	3
29	D	8	16	2	19	7	21	-3	1	-6	22	16	11	2	-20	-18	-21	-17	-9	-1	-9	-10	-14	-17	-3	-1
30		2	7	2	6	11	18	11	3	7	18	13	12	5	-4	-14	-19	-17	-6	3	7	7	13	15	13	5
MEAN		12	13	14	16	17	19	16	15	15	17	18	18	14	7	-1	-5	-4	2	9	12	11	11	9	10	11
MEAN	Q	16	16	16	15	15	15	16	16	17	18	21	23	19	10	1	-2	1	5	11	17	19	18	17	17	14
MEAN	D	9	9	6	16	11	18	10	8	9	16	12	11	8	0	-5	-6	-7	0	6	3	-1	-2	-4	2	5

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — VERTICAL INTENSITY

SEPTEMBER 2007 — Z =-29500 nT PLUS TABULAR QUANTITIES (UNITS 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	MEAN
1		---	91	93	96	97	100	98	104	---	---	---	---	---	102	---	109	112	110	108	103	102	96	95	97	101
2	D	92	97	90	103	121	102	96	97	103	104	123	117	103	102	111	108	108	102	98	99	92	89	89	92	102
3		93	94	94	102	107	110	115	108	104	101	97	98	106	100	104	119	119	107	101	99	97	97	99	96	103
4		94	94	96	99	99	102	101	103	106	104	103	99	98	97	102	107	108	104	102	99	95	95	98	98	100
5		98	100	98	97	102	114	113	116	116	109	103	99	99	102	102	104	103	98	97	100	98	96	95	96	102
6		95	97	97	102	99	101	100	98	97	97	98	101	97	98	105	110	113	112	104	92	91	88	95	90	99
7		81	85	92	98	98	94	93	95	96	95	95	95	94	100	102	108	110	105	97	90	89	89	91	93	95
8		94	96	97	97	95	97	100	99	98	97	100	96	94	97	105	111	113	105	99	95	94	91	95	96	98
9	Q	96	95	96	97	97	98	98	100	100	100	99	98	97	102	111	110	109	105	104	100	96	98	100	101	100
10	Q	102	101	101	102	101	101	101	101	101	101	100	101	102	106	112	113	112	108	104	98	96	98	99	100	102
11	Q	100	101	101	101	102	102	103	104	103	102	101	101	103	108	111	114	114	108	103	98	96	98	99	99	103
12	Q	100	100	101	101	100	101	102	101	102	101	100	99	102	108	113	116	116	112	108	103	97	97	100	100	103
13	Q	101	102	102	102	103	102	102	102	102	103	103	102	104	110	114	116	115	114	106	98	93	97	100	103	104
14		105	104	103	103	104	104	104	104	105	103	104	103	106	111	117	121	121	117	111	105	99	102	108	108	107
15		105	106	108	108	108	109	109	107	106	105	104	104	107	111	114	117	114	112	106	99	97	101	104	103	107
16		103	105	105	103	103	105	104	104	105	105	103	103	104	108	113	117	119	116	106	94	90	96	100	102	105
17		103	104	105	105	106	106	105	105	105	104	102	103	106	112	115	120	118	111	100	92	91	94	100	101	105
18		104	102	104	111	109	108	108	107	106	105	103	104	106	112	115	119	116	111	102	98	96	99	100	101	106
19		102	103	104	103	104	105	108	108	108	106	106	105	105	111	118	122	122	116	109	105	102	102	104	104	108
20		104	104	105	105	106	105	105	106	107	108	107	103	105	113	126	133	133	125	118	115	107	104	95	97	110
21		96	97	96	99	100	98	102	102	104	107	107	105	106	111	117	119	117	113	112	105	101	103	111	103	105
22		99	101	98	97	99	101	105	107	110	107	109	105	106	108	111	113	112	108	101	93	106	96	98	96	104
23	D	94	97	101	100	106	120	128	118	119	108	103	108	109	108	111	115	114	110	103	100	99	98	100	100	107
24		102	98	102	103	111	120	113	108	110	109	105	105	111	113	117	116	114	110	101	96	95	97	100	100	106
25		103	101	103	101	101	103	105	106	105	104	102	102	105	107	110	112	111	109	103	99	102	104	99	101	104
26		102	101	103	103	102	104	105	106	105	105	106	107	109	112	117	120	116	111	106	101	98	101	103	105	106
27	D	105	105	106	105	105	105	105	105	106	107	108	109	109	116	125	132	143	135	111	97	106	106	100	98	110
28	D	97	104	109	108	103	105	101	114	125	116	112	113	116	117	118	117	113	109	104	103	107	96	94	96	108
29	D	90	102	112	139	135	138	118	105	127	114	120	115	113	121	114	113	108	101	96	91	90	89	93	89	110
30		94	94	96	97	98	108	112	116	119	105	106	107	108	111	116	116	117	112	104	95	93	92	93	98	104
MEAN		98	99	101	103	104	106	105	105	107	104	104	104	104	108	112	116	115	111	104	99	97	97	98	99	104
MEAN	Q	100	100	100	101	101	101	101	102	102	101	101	100	102	107	112	114	113	109	105	99	96	98	100	101	103
MEAN	D	96	101	103	111	114	114	110	108	116	110	113	113	110	113	116	117	117	111	102	98	99	96	95	95	107

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — TOTAL INTENSITY

SEPTEMBER 2007 — F = 35500 nT PLUS TABULAR QUANTITIES (UNITS 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	MEAN
1		---	76	77	72	71	68	75	65	---	---	---	---	---	68	---	56	53	53	56	60	58	66	69	61	65
2	D	62	51	64	67	40	56	63	63	61	62	40	53	66	63	45	46	47	56	58	52	66	70	72	66	58
3		67	69	73	72	63	63	54	59	60	63	67	68	60	65	58	37	40	55	63	65	67	63	56	63	61
4		68	71	70	66	69	65	66	65	63	63	64	68	69	66	58	53	53	57	61	65	69	69	66	66	65
5		63	60	63	68	70	63	58	51	54	58	62	70	66	62	58	55	57	64	66	60	62	65	66	64	62
6		67	63	70	58	62	60	61	64	66	66	68	65	67	62	51	42	37	38	49	65	68	71	49	53	59
7		70	71	66	55	64	66	66	65	63	66	64	66	65	55	50	42	40	44	57	68	71	72	71	71	62
8		68	66	66	64	67	65	64	67	66	67	64	69	72	65	52	42	39	51	61	64	66	70	67	66	63
9	Q	67	68	69	68	68	68	68	66	65	66	69	72	72	63	50	49	51	56	60	66	71	69	66	65	65
10	Q	65	66	65	64	64	64	64	66	67	68	69	69	66	59	50	47	48	52	58	68	70	68	68	68	63
11	Q	68	67	67	68	66	65	65	62	64	67	69	69	64	54	47	45	47	55	62	69	70	68	66	67	63
12	Q	67	67	64	62	64	63	62	65	65	67	70	71	68	60	51	44	45	50	56	64	70	69	67	68	62
13	Q	68	67	68	68	67	68	68	69	68	68	70	71	66	54	46	43	46	50	62	73	79	75	71	68	65
14		65	67	69	69	68	68	68	68	67	70	71	72	67	57	48	44	45	53	64	72	79	75	65	64	65
15		67	66	65	64	63	61	60	61	63	65	68	68	64	55	49	44	48	52	63	72	73	68	63	66	62
16		65	60	63	65	68	66	67	67	66	66	68	69	67	60	49	41	38	45	57	75	80	74	70	69	63
17		67	67	66	66	66	66	66	66	66	68	70	68	61	50	43	37	40	50	65	75	79	77	72	69	63
18		65	72	71	61	63	63	64	63	64	65	68	66	60	50	43	37	42	50	62	69	73	70	69	69	62
19		68	67	66	68	68	71	66	64	64	65	66	69	68	56	43	38	40	49	59	64	67	67	66	67	62
20		67	67	67	67	66	69	69	67	66	65	69	76	73	59	41	29	27	39	46	47	52	57	68	56	59
21		64	63	68	66	69	73	68	68	67	63	63	64	62	56	46	43	46	52	55	64	68	62	49	61	61
22		65	58	67	70	69	70	65	62	61	65	61	64	58	54	47	44	47	52	62	72	45	63	63	69	61
23	D	71	75	67	70	65	62	44	48	45	56	62	54	51	53	49	43	46	51	61	64	63	61	56	61	58
24		58	68	63	66	59	55	55	61	59	58	61	60	50	47	39	41	43	48	62	69	70	67	66	65	58
25		56	63	61	64	66	65	60	60	61	62	64	61	57	54	49	46	48	51	61	67	57	56	65	63	59
26		64	67	63	64	67	65	63	61	62	62	61	60	56	49	41	36	42	52	60	67	70	66	64	64	59
27	D	63	64	63	65	65	63	64	64	63	62	61	59	60	52	42	35	17	28	56	74	53	52	62	63	56
28	D	64	56	49	51	62	63	66	51	46	54	54	49	43	41	39	41	48	53	61	56	48	59	53	57	53
29	D	71	65	49	36	33	38	42	54	32	59	50	51	48	29	37	35	41	52	60	60	61	59	54	66	49
30		64	67	62	64	66	61	54	47	46	64	60	59	54	46	37	34	34	45	56	66	67	72	72	67	57
MEAN		66	66	65	64	64	64	63	62	61	64	64	65	62	55	47	42	43	50	59	66	66	67	64	65	61
MEAN	Q	67	67	67	66	66	66	66	65	66	67	69	70	67	58	49	45	48	53	60	68	72	70	68	67	64
MEAN	D	66	62	58	58	53	57	56	56	49	59	53	53	54	48	42	40	40	48	59	61	58	60	59	63	55

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — DECLINATION EAST

OCTOBER 2007 — 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
DAY																										
1		323	324	315	296	296	306	321	323	321	335	326	323	323	323	335	350	366	368	367	363	349	336	326	327	331
2		327	318	312	314	308	315	314	310	323	329	317	312	308	310	322	344	363	373	373	362	347	340	338	334	330
3	D	315	329	326	304	294	305	278	280	288	294	298	306	307	323	355	357	369	378	363	355	343	312	293	320	320
4		320	314	276	301	285	305	314	314	316	306	294	298	305	318	326	349	361	370	370	357	349	341	337	334	323
5		332	326	329	316	305	305	306	311	322	315	314	314	310	320	327	341	358	364	365	355	344	336	334	331	328
6		330	330	329	326	327	322	322	322	318	312	310	310	320	333	339	350	359	362	358	352	346	339	334	331	333
7		332	327	328	328	326	323	325	321	313	312	306	303	302	313	324	337	357	360	348	337	333	334	334	332	327
8	Q	329	327	327	327	324	320	319	318	314	313	310	308	304	303	310	327	347	362	364	355	345	338	331	330	327
9	Q	325	325	323	322	319	315	313	311	311	309	306	300	298	306	316	330	349	357	360	357	347	337	331	327	325
10	Q	324	323	321	321	320	311	309	313	309	305	305	303	302	304	305	319	338	356	371	369	361	351	337	330	325
11	Q	326	324	323	321	319	317	315	313	310	308	305	301	296	294	301	317	339	360	364	356	344	337	332	329	323
12		327	326	325	323	320	309	304	308	302	303	297	290	299	300	311	333	352	360	360	352	348	347	353	342	325
13		338	333	329	325	320	318	314	312	308	308	309	305	301	307	324	345	368	381	376	360	343	333	328	333	330
14		330	327	326	323	311	311	321	303	294	303	303	301	308	308	325	350	364	364	356	---	---	---	328	---	324
15		---	---	308	---	318	317	314	---	---	---	---	---	307	308	---	---	---	---	363	349	336	327	322	323	---
16		322	322	322	320	317	315	313	311	303	302	299	296	291	298	314	343	371	383	370	354	341	328	324	323	324
17	Q	323	320	314	318	317	315	311	308	302	299	298	295	296	300	308	317	---	---	373	368	349	335	---	---	321
18		---	322	320	317	314	282	293	296	311	298	289	320	304	296	313	336	361	379	387	381	365	362	334	332	327
19	D	310	305	300	303	313	301	312	314	311	297	297	292	295	315	338	343	363	382	379	366	356	315	334	326	324
20		306	265	275	284	267	291	314	313	313	320	315	322	315	312	317	335	356	376	376	355	351	---	---	---	319
21		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
22		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
25	D	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
26	D	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27	D	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
28		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
29		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
30		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
31		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MEAN		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	Q	326	324	322	322	320	316	313	313	309	307	305	301	299	301	308	322	341	359	366	361	349	340	332	329	324
MEAN	D	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — HORIZONTAL INTENSITY

OCTOBER 2007 — 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
DAY																										
1		14	12	15	15	8	7	9	14	6	8	11	8	8	-1	-9	-13	-15	-6	3	11	13	11	11	11	6
2		11	20	22	15	21	15	17	13	9	11	9	8	4	-2	-8	-10	-5	2	11	15	19	17	18	4	10
3	D	2	14	15	19	15	19	25	15	22	4	10	3	2	-9	-30	-16	-9	-4	4	12	9	0	-7	4	5
4		7	1	6	10	20	2	4	4	6	9	3	2	-7	-11	-10	-18	-11	-1	1	11	15	14	15	15	4
5		14	15	13	13	4	2	7	5	2	8	10	9	4	-9	-16	-17	-9	-2	6	8	11	13	14	14	5
6		14	16	17	14	14	12	10	13	11	11	11	10	0	-7	-6	-6	-1	2	8	9	9	10	10	14	8
7		16	18	16	17	17	14	14	14	13	14	14	13	5	-7	-12	-12	-5	6	14	16	14	13	15	14	10
8	Q	14	15	15	16	15	15	15	15	14	13	15	15	9	-2	-9	-10	-9	-1	7	13	17	17	15	15	10
9	Q	16	17	17	17	17	16	15	14	14	13	13	14	7	-3	-12	-13	-7	0	10	17	21	22	21	20	11
10	Q	20	20	20	18	18	18	13	14	14	12	12	9	0	-9	-14	-17	-13	-7	0	9	15	18	18	18	9
11	Q	19	20	21	21	21	21	20	19	19	20	21	20	15	4	-3	-5	-3	6	14	18	20	21	21	24	16
12		27	30	32	34	34	32	28	29	23	22	23	18	8	-2	-9	-11	-6	11	21	19	17	3	9	16	17
13		18	20	21	21	22	23	23	21	21	21	20	18	8	-2	-6	-9	-4	9	23	26	26	24	20	17	16
14		14	19	22	19	18	15	23	17	12	8	20	10	7	-13	-17	-12	-7	-1	8	---	---	---	14	---	9
15		---	---	18	---	23	22	19	---	---	---	---	---	7	-3	---	---	---	---	8	15	15	13	13	15	---
16		17	19	20	22	21	20	19	17	17	18	17	14	3	-9	-20	-26	-18	-4	10	21	22	20	18	17	11
17	Q	16	16	16	18	17	17	17	16	15	14	15	12	6	-2	-7	-10	---	---	16	22	22	22	---	---	13
18		---	27	26	26	30	28	25	28	31	36	25	19	10	-8	-18	-20	-16	-2	5	3	7	-11	5	5	12
19	D	6	1	17	19	22	20	18	20	21	19	18	17	3	-22	-28	-13	-8	-9	-10	-7	0	-1	8	10	5
20		13	21	3	7	6	1	-2	9	6	6	4	7	-6	-12	-16	-14	-14	-10	-9	3	7	---	---	---	1
21		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
22		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
25	D	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
26	D	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27	D	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
28		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
29		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
30		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
31		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MEAN		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	Q	17	18	18	18	18	17	16	15	15	14	15	14	7	-2	-9	-11	-7	1	9	16	19	20	19	20	12
MEAN	D	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — VERTICAL INTENSITY

OCTOBER 2007 — Z =-29500 nT PLUS TABULAR QUANTITIES (UNITS 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	MEAN
1		99	100	104	105	109	108	107	106	108	110	109	110	109	112	115	118	121	111	107	101	98	97	96	99	107
2		100	99	102	106	104	108	108	111	109	107	107	106	108	113	118	122	120	114	105	98	92	94	96	100	106
3	D	103	99	99	100	104	105	107	118	117	116	105	109	109	117	132	115	110	105	98	93	93	93	97	96	106
4		95	100	105	111	115	111	103	103	103	102	105	105	111	114	115	122	116	112	110	102	99	100	99	100	106
5		101	101	103	104	108	109	108	108	107	101	101	103	105	112	116	118	117	112	104	101	99	99	99	99	106
6		101	101	102	103	103	104	106	106	105	103	105	106	112	115	115	117	116	113	108	104	101	100	102	101	106
7		100	102	103	103	103	104	106	107	105	105	105	106	109	115	115	116	112	106	101	102	103	105	103	104	106
8	Q	105	105	105	105	105	104	105	106	105	106	106	106	108	113	120	121	120	115	109	103	101	102	103	105	108
9	Q	105	104	105	105	104	105	106	106	106	106	108	109	113	120	122	122	119	113	108	103	100	101	102	104	108
10	Q	105	106	106	107	107	107	108	108	106	107	108	109	112	114	117	118	116	113	110	105	102	99	98	101	108
11	Q	103	104	105	105	106	106	107	107	108	109	112	112	113	118	125	127	128	124	116	110	105	105	106	106	111
12		106	106	106	106	106	108	111	110	112	114	113	113	117	123	130	131	127	118	111	108	106	113	112	106	113
13		106	106	105	106	105	105	106	107	108	111	113	115	117	121	124	129	128	122	112	107	102	101	104	109	111
14		111	108	106	108	110	110	112	115	112	114	112	116	115	120	121	124	119	112	106	---	---	---	103	---	112
15		---	---	106	---	104	105	107	---	---	---	---	---	115	121	---	---	---	---	110	103	99	101	102	104	---
16		104	104	106	105	105	106	107	107	106	107	109	111	113	120	129	135	130	117	105	97	94	96	99	103	109
17	Q	106	107	107	107	106	106	106	107	106	109	112	114	117	122	126	132	---	---	123	111	105	104	---	---	113
18		---	106	106	107	108	110	109	107	110	114	120	127	124	129	133	136	132	123	116	113	100	108	97	96	114
19	D	97	102	97	101	101	104	106	106	107	110	115	117	123	134	133	120	120	120	112	106	94	93	93	95	109
20		96	98	113	120	121	118	120	104	105	109	111	112	115	114	119	126	130	128	119	106	102	---	---	---	112
21		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
22		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
25	D	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
26	D	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27	D	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
28		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
29		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
30		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
31		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MEAN		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	Q	105	105	106	106	106	106	106	107	106	107	109	110	113	117	122	124	123	119	113	106	103	102	103	104	109
MEAN	D	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — TOTAL INTENSITY

OCTOBER 2007 — F = 35500 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
DAY																										
1		66	65	63	63	55	55	58	61	55	54	57	54	55	47	41	35	33	45	54	63	66	66	68	65	56
2		64	69	68	61	66	59	61	56	56	58	57	57	54	46	38	34	38	47	60	68	75	72	71	60	58
3	D	57	66	67	68	63	64	66	52	56	47	59	52	51	39	15	36	44	51	61	71	69	64	56	63	56
4		65	59	57	55	57	50	57	58	59	61	56	55	45	40	40	30	38	48	51	62	67	66	67	67	54
5		65	65	63	62	54	52	55	54	53	61	63	61	56	43	36	33	38	47	58	62	65	66	66	66	56
6		65	66	66	63	63	61	58	60	60	62	59	58	48	41	42	41	44	48	56	60	62	63	62	65	57
7		66	67	64	65	65	63	61	60	61	62	61	60	53	42	38	38	45	56	65	65	63	61	63	63	59
8	Q	62	63	62	63	62	63	62	62	61	60	61	61	56	46	36	34	36	44	55	63	67	66	64	62	57
9	Q	63	64	64	63	64	62	62	60	61	60	59	58	51	40	33	32	38	47	57	65	70	70	68	66	57
10	Q	65	64	64	63	62	62	58	59	61	59	58	55	48	41	36	33	37	43	49	59	65	69	69	67	56
11	Q	66	66	65	65	65	65	64	63	62	62	60	59	55	45	36	32	33	41	53	60	65	66	65	66	57
12		69	70	71	72	72	69	64	67	61	59	60	57	48	37	28	26	33	49	60	62	63	49	53	62	57
13		63	65	65	64	66	67	66	64	63	61	58	56	48	40	35	29	33	45	60	67	71	71	66	60	58
14		57	62	65	62	60	58	60	55	55	51	59	50	50	34	31	31	38	48	57	---	---	---	63	---	54
15		---	---	63	---	67	66	63	---	---	---	---	---	50	38	---	---	---	---	54	64	67	65	63	64	---
16		64	65	64	66	66	64	63	61	63	63	60	56	49	36	23	14	22	41	60	72	75	73	69	65	56
17	Q	63	61	61	62	62	62	62	61	61	59	56	53	47	39	32	26	---	---	48	61	66	66	---	---	55
18		---	68	67	67	68	66	65	68	67	67	56	46	44	30	21	17	23	38	48	49	61	45	63	64	53
19	D	63	57	70	67	70	66	63	64	64	60	56	53	40	17	15	34	37	36	42	49	63	63	68	67	53
20		69	71	49	45	44	44	40	60	57	54	51	52	42	40	33	28	25	29	37	54	60	---	---	---	48
21		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
22		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
25	D	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
26	D	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27	D	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
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LIVINGSTON ISLAND MAGNETIC OBSERVATORY — DECLINATION EAST

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LIVINGSTON ISLAND MAGNETIC OBSERVATORY — DECLINATION EAST

DECEMBER 2007 — 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
DAY																										
1		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
5		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	324	338	348	350	351	348	344	343	335	329	325	---
9		327	326	321	318	311	306	295	287	275	266	271	277	284	305	331	358	365	360	357	358	353	348	338	328	319
10		325	323	319	317	308	288	283	262	252	257	270	271	284	293	308	326	340	351	353	358	360	368	390	369	316
11	D	316	326	315	300	293	286	284	277	281	292	301	308	316	344	352	369	385	382	387	380	353	331	347	341	328
12		332	333	310	296	296	309	309	303	280	286	311	310	322	327	339	353	359	357	352	347	338	333	331	335	324
13		333	328	320	317	310	290	292	287	281	280	285	303	323	331	330	335	350	354	361	---	---	330	324	326	320
14		327	322	320	315	313	306	297	290	288	284	291	286	289	303	321	340	355	360	364	353	341	336	334	332	319
15		329	328	322	319	312	306	295	288	279	276	282	289	300	317	327	336	344	352	358	357	344	335	331	331	319
16		327	321	322	318	314	306	301	293	281	272	266	272	289	296	312	331	351	350	344	341	342	331	327	341	315
17	D	333	324	317	310	304	289	263	243	229	239	262	262	305	344	329	356	381	388	389	379	357	350	340	330	318
18	D	314	322	310	298	283	278	285	253	249	258	277	295	342	332	342	367	381	394	392	379	359	335	334	334	321
19		326	325	312	299	309	303	304	295	291	281	283	292	298	319	329	345	357	361	356	348	343	339	348	345	321
20	D	333	303	314	310	291	282	279	277	286	284	286	294	301	311	317	342	371	393	389	375	364	350	342	344	322
21	D	328	328	312	307	301	303	307	295	292	289	291	301	308	314	332	362	363	373	365	358	338	337	335	334	324
22		331	325	317	300	306	304	305	302	287	278	279	288	301	321	322	334	354	361	364	368	335	335	335	330	320
23		321	325	319	314	311	306	294	284	282	285	288	299	313	319	326	343	360	360	353	346	343	327	319	322	319
24		322	320	320	314	310	302	298	293	282	279	278	281	297	315	339	359	362	355	352	350	347	338	331	330	320
25	Q	326	322	319	316	316	312	303	287	283	283	286	294	303	316	331	349	374	381	373	360	340	324	324	327	323
26		325	321	310	314	311	307	300	291	282	284	281	282	282	296	301	---	---	353	351	344	337	328	323	321	312
27		319	316	315	314	297	286	288	279	271	265	268	275	293	307	318	---	339	368	382	358	337	331	330	329	313
28		327	304	313	315	310	287	286	280	273	273	277	281	292	300	308	323	343	355	355	349	340	330	331	332	312
29		328	324	320	318	315	311	307	301	294	287	291	294	297	303	324	347	371	391	387	377	356	340	341	343	328
30		340	333	325	---	---	303	296	286	282	281	281	283	282	---	299	318	344	364	364	350	---	---	---	323	---
31		324	322	319	316	312	310	302	291	282	277	282	284	274	281	---	---	---	---	---	---	346	331	331	331	---
MEAN		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	D	325	321	314	305	294	287	284	269	267	273	284	292	314	329	334	359	376	386	384	374	354	340	340	337	323

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — HORIZONTAL INTENSITY

DECEMBER 2007 — 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
DAY																										
1		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
5		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	-4	-11	-6	8	20	23	20	21	21	18	19	---
9		23	22	25	25	26	26	25	24	21	19	14	6	-3	-10	-6	-1	3	11	8	6	13	13	15	16	13
10		15	15	18	24	23	16	16	20	17	12	10	7	7	2	-2	-7	2	12	17	22	34	41	32	6	15
11	D	6	16	22	24	24	22	18	16	10	-2	-1	-6	-14	-22	-15	-9	-5	3	7	10	13	15	13	23	7
12		14	15	20	9	9	18	16	13	4	1	-7	-13	-18	-23	-20	-16	-7	5	12	15	8	3	5	5	3
13		6	8	10	11	12	7	14	12	7	3	0	-2	-6	-8	-14	-13	-11	-6	3	---	---	14	13	12	4
14		11	13	12	15	18	19	17	14	10	6	4	5	5	-2	-7	-11	-7	2	8	14	20	14	12	11	8
15		12	14	14	16	19	17	16	16	13	7	5	2	1	-5	-8	-7	-5	3	11	14	15	15	16	17	9
16		12	12	16	18	20	17	17	15	13	11	6	2	1	0	-2	-3	-1	-1	4	16	22	15	11	7	10
17	D	13	15	19	39	51	70	61	42	16	5	12	10	3	6	-1	-12	-27	-12	-2	-5	13	9	15	3	14
18	D	0	3	7	17	10	8	18	14	8	-5	-14	-22	-17	-11	-10	-15	-12	-10	-9	6	10	3	10	4	0
19		12	11	15	13	17	14	10	5	-2	-8	-12	-12	-14	-15	-9	-3	-4	0	1	3	9	12	9	9	3
20	D	15	19	15	17	24	14	12	13	5	4	0	-2	-4	-7	-5	-6	-11	8	7	14	17	11	10	9	7
21	D	12	14	17	15	13	12	16	16	2	-7	-11	-12	-5	-3	-9	-23	-11	0	4	10	10	4	5	7	3
22		6	9	10	11	14	12	14	14	10	6	-1	-13	-18	-16	-6	1	1	0	6	1	1	7	13	3	4
23		11	11	10	13	11	12	11	7	1	-6	-11	-14	-15	-13	-13	-8	-3	7	16	21	16	10	10	6	4
24		8	11	11	12	10	7	5	7	3	-3	-3	-5	-13	-18	-17	-11	0	7	10	8	8	3	3	8	2
25	Q	10	9	10	10	13	14	14	12	10	8	4	-1	-6	-11	-15	-16	-9	2	14	16	10	3	3	7	5
26		10	10	13	17	21	23	24	22	17	12	7	6	2	-3	-5	---	---	5	16	23	24	18	18	21	13
27		20	26	30	26	19	12	7	8	7	3	1	-4	-13	-14	-11	---	-3	8	16	31	27	26	23	18	11
28		20	21	13	14	17	16	10	7	3	1	-1	-4	-9	-14	-11	-9	-1	3	9	10	8	7	6	7	5
29		7	7	10	12	12	13	12	9	4	2	2	3	-7	-17	-20	-16	-14	-8	0	10	12	16	12	11	3
30		13	15	18	---	---	15	14	11	7	7	8	6	7	---	1	-4	-9	-7	8	11	---	---	---	12	---
31		16	21	26	25	23	24	25	25	21	19	13	6	8	9	---	---	---	---	---	---	9	7	9	9	---
MEAN		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	D	9	14	16	22	24	25	25	20	8	-1	-3	-6	-7	-7	-8	-13	-13	-2	1	7	13	8	11	9	6

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — VERTICAL INTENSITY

DECEMBER 2007 — Z =-29500 nT PLUS TABULAR QUANTITIES (UNITS 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	MEAN
1		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
5		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	139	141	135	130	126	122	122	116	114	116	117	---
9		116	117	116	115	115	113	114	116	121	126	133	139	144	148	148	143	135	130	129	122	116	115	111	114	125
10		116	117	114	111	112	115	115	113	117	125	131	137	139	137	140	143	139	138	129	126	119	111	101	104	123
11	D	100	103	102	107	113	114	118	120	123	131	134	138	142	145	142	140	138	129	123	120	110	102	109	105	121
12		106	109	108	119	116	110	117	117	122	124	134	138	139	143	144	136	128	122	113	108	113	114	112	112	121
13		112	109	110	109	112	117	109	112	118	124	131	136	139	140	137	135	135	131	122	---	---	109	110	113	121
14		116	115	114	113	112	112	113	116	120	125	133	134	135	141	144	139	135	132	125	120	112	113	114	116	123
15		118	117	115	114	112	113	114	117	120	125	131	135	138	141	140	140	141	137	132	125	118	116	117	114	125
16		117	117	115	114	113	116	116	117	121	122	126	132	139	143	143	146	143	136	130	124	118	119	119	124	125
17	D	117	115	115	104	101	96	107	127	146	157	157	149	155	147	152	161	158	140	127	122	109	110	105	106	128
18	D	104	106	103	110	114	119	129	129	133	135	138	141	147	136	140	148	139	138	136	118	108	107	100	109	124
19		108	109	108	111	117	121	123	126	127	126	131	134	138	140	142	140	135	128	126	121	115	114	114	117	124
20	D	110	108	112	110	112	124	122	125	134	131	133	134	137	139	140	147	159	146	134	127	117	118	114	114	127
21	D	109	109	111	113	116	117	124	125	133	135	136	136	135	134	140	147	136	129	123	118	111	117	121	118	125
22		118	116	113	112	111	114	114	118	122	128	135	141	142	142	134	138	137	133	126	123	119	117	114	118	124
23		112	111	113	112	115	118	122	124	127	132	135	138	139	137	141	138	135	127	123	119	119	117	113	119	124
24		118	117	117	116	116	118	119	117	121	129	134	137	141	142	141	144	142	136	129	121	117	119	122	118	126
25	Q	117	117	117	117	115	114	114	117	121	124	128	133	136	136	138	140	139	132	123	118	116	118	117	117	123
26		115	115	113	113	111	110	111	116	122	127	131	133	138	140	142	---	---	142	139	130	121	116	115	113	124
27		117	116	114	117	122	124	124	122	122	127	133	138	142	142	141	---	143	138	133	127	130	128	124	124	129
28		119	115	121	120	118	121	123	124	127	129	131	134	137	139	142	141	137	135	131	124	123	121	120	117	127
29		120	120	118	117	118	119	121	123	124	128	132	132	135	140	148	151	148	141	132	121	118	116	121	124	128
30		119	119	115	---	---	117	119	123	127	129	130	131	134	---	139	142	149	148	139	126	---	---	---	118	---
31		118	115	115	116	119	120	120	119	122	126	132	136	135	135	---	---	---	---	---	---	125	123	121	121	---
MEAN		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	D	108	108	109	109	111	114	120	125	134	138	140	139	143	140	143	148	146	136	128	121	111	111	110	110	125

LIVINGSTON ISLAND MAGNETIC OBSERVATORY — TOTAL INTENSITY

DECEMBER 2007 — F = 35500 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
DAY																										
1		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
5		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	23	18	26	37	47	53	51	56	58	55	55	---
9		58	56	58	59	60	62	61	58	52	47	38	29	20	13	15	22	31	39	39	43	52	53	58	55	45
10		53	52	56	62	61	54	55	58	53	43	38	31	30	28	23	19	27	33	43	49	61	72	75	58	47
11	D	61	65	69	65	60	58	53	50	45	31	29	23	15	8	15	20	24	36	43	47	57	64	58	66	44
12		61	59	63	47	50	60	53	51	42	39	26	19	16	10	10	19	31	43	54	59	52	48	51	51	42
13		51	55	55	57	55	47	58	54	47	39	33	27	22	20	19	22	23	29	42	---	---	58	57	54	43
14		51	53	53	56	58	59	56	53	46	41	33	32	32	23	17	20	25	33	41	50	60	56	53	51	44
15		49	51	53	55	58	56	55	53	49	41	35	30	27	21	20	21	21	29	38	45	51	54	53	55	43
16		50	50	54	56	58	54	54	52	48	46	39	33	27	23	21	18	22	28	35	47	55	50	48	42	42
17	D	51	54	56	76	86	100	87	59	29	14	17	23	14	22	14	1	-6	18	35	37	58	55	62	55	42
18	D	54	54	59	59	52	47	44	41	35	26	19	11	10	22	20	10	19	21	23	46	57	54	63	53	38
19		58	57	59	56	53	48	45	39	35	32	25	23	19	16	18	24	27	34	37	42	51	53	51	49	40
20	D	58	62	56	60	61	45	47	45	33	34	31	29	25	21	22	15	3	24	34	43	53	49	52	51	40
21	D	57	58	59	56	52	51	47	46	32	25	22	22	26	28	19	6	22	34	41	49	54	46	43	47	39
22		46	49	53	54	56	53	55	51	45	38	28	17	13	14	26	27	28	30	40	39	43	47	54	44	40
23		55	55	53	55	51	50	46	42	36	28	23	18	17	20	17	22	28	39	48	54	52	50	52	46	40
24		48	50	50	52	50	47	45	47	42	32	28	25	17	13	15	15	23	32	40	45	49	44	41	48	37
25	Q	49	49	49	50	53	54	54	51	46	42	37	30	25	22	18	16	21	33	47	52	50	45	46	48	41
26		51	51	54	57	61	62	62	58	49	42	36	34	28	23	20	---	---	26	34	46	54	55	56	58	46
27		55	59	63	58	51	44	42	45	43	37	31	25	16	16	18	---	20	31	40	53	48	50	51	48	40
28		53	57	48	49	52	49	45	42	37	35	31	28	22	17	17	19	26	30	38	44	44	45	45	48	38
29		45	46	48	50	50	49	47	44	40	35	32	33	25	15	7	7	10	19	31	46	50	54	47	45	37
30		50	51	56	---	---	52	50	45	40	38	38	36	34	---	26	21	12	14	30	43	---	---	---	50	---
31		52	58	60	59	55	55	56	56	51	47	39	32	33	34	---	---	---	---	---	---	43	43	45	46	---
MEAN		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	D	56	59	60	63	62	60	56	48	35	26	23	22	18	20	18	11	12	27	35	44	56	54	56	54	41

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