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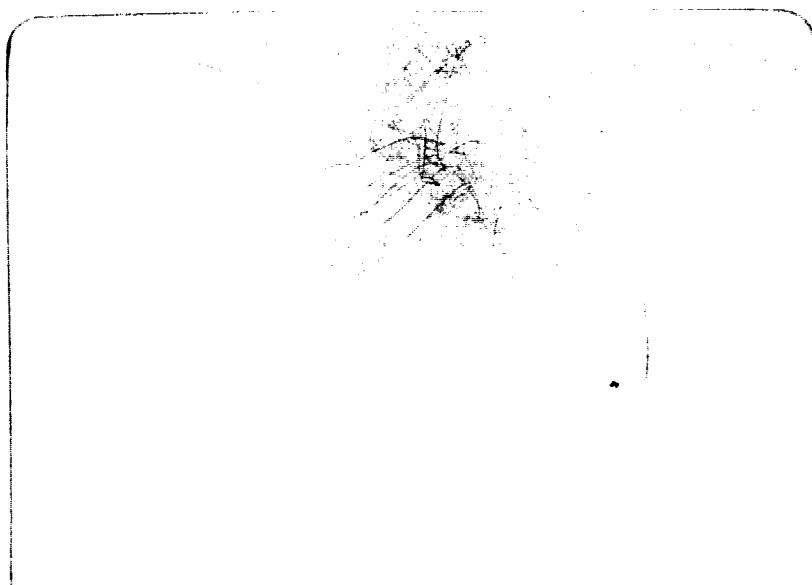
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COMPARISON OF STORM-TIME CHANGES OF GEOMAGNETIC FIELD
AT GROUND AND AT MAGSAT ALTITUDES
PART III

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Abstract

The latitudinal distributions of ΔH , ΔX , ΔY , ΔZ were studied for quiet and disturbed periods. For quiet periods, the average patterns showed some variations common to Dusk and Dawn, thus indicating probable ground anomaly. However, there were significant differences too between Dusk and Dawn, indicating considerable diurnal variation effects. Particularly in ΔY , these effects were large and were symmetric about the dip equator. For disturbed day passes, the quiet day patterns were considered as base levels and the latter were subtracted from the former. The resulting residual latitudinal patterns were, on the average, symmetric about the geographical equator. However, individual passes showed considerable north-south asymmetries, probably indicating meanderings of the central plane of the magnetospheric ring current.

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1. Introduction

The present investigation deals with the study of the storm-time variation at MAGSAT altitudes.

2. Techniques

From the data supplied to us on magnetic tape, the X, Y, Z components of the geomagnetic field were available for several passes. From these, the H component was obtained as $H = (X^2 + Y^2)^{1/2}$ and was expressed as $\Delta H = H$ (Observed) minus H (model). Similarly, ΔX , ΔY , ΔZ were obtained. The MAGSAT altitude at which these values are valid is not always constant and changes in the geocentric radius range $R = 6800 \pm 100$ km. Hence, these values were normalized to a constant geocentric distance $R_0 = 6800$ km by using an inverse R³ relationship. This effect was only of the order of a few percent.

3. Accomplishments

In the NASA Technical Memorandum 82160 entitled "MAGSAT DATA PROCESSING: A REPORT FOR INVESTIGATORS" by R. Langel, J. Berbert, T. Jennings and R. Horner (Nov. 1981), the authors have reported values of ΔB at satellite for dip equator and D-EQL (Sugiura), relative equatorial disturbance in horizontal component for ground observatories. It would be interesting to see how our parameter ΔH compares with these.

Figure 1 shows a plot of ΔH_0 i.e. ΔH at geographic equator for Dusk (full lines) and Dawn (crosses) passes separately for the period Nov. 11-15, 1979. The top curve is for ΔH_0 (original). The second plot is for ΔH_0 (corrected) which is obtained by subtracting from ΔH_0 (original) the base-levels of ΔH_0 (i.e. average ΔH_0 for quiet periods) as described and given in the previous reports. Thus, ΔH_0 (corrected) for quiet period (e.g. Nov. 11-12) is almost zero, for Dawn as well as Dusk.

The third plot in Figure 1 is for ΔB and the fourth plot is for D-EQL (Sugiura). In general, all the four plots look similar. Two values of ΔB (marked as big dots) seem to be erroneous. Table 1 lists some erroneous values.

Figure 2 (left half) shows a plot of ΔH_0 (original) versus ΔB for Dusk and Dawn separately (upper and lower half). If some odd points (big dots) are ignored, excellent correlations are obtained with zero levels matching. Figure 2 (right half) shows ΔH_0 (corrected) versus ΔB . Here too, correlations are excellent; but the zero levels are different. Thus, ΔB matches almost completely with ΔH_0 (original). This is as expected.

Figure 3 (left half) shows ΔH_0 (original) versus D-EQL for Dusk passes. Correlation is high (+ 0.94) but some scatter is noticed. Figure 3 (right half) shows ΔH_0 (corrected) versus D-EQL.

Correlation is roughly the same. Thus, for Dusk passes, both ΔH_0 (original) and ΔH_0 (corrected) show good parallelism within a scatter of ± 10 nT.

Figure 4 shows similar plots for the Dawn passes. Here, correlations are lower (+ 0.76) and the scatter is large. Thus, ΔH_0 at the satellite and D-EQL at ground show a very good correlation for Dusk passes but not so good a correlation for Dawn passes. This is rather surprising; because, in the previous reports we have shown that for about a dozen observatories at different longitudes and latitudes (within $\pm 30^\circ$ of equator), the variations at ground and at satellite were very well correlated (+ 0.90 or more) for both Dawn and Dusk passes. May be that D-EQL as obtained by Sugiura has some uncertainties. This needs scrutiny.

So far, we concentrated attention on the equatorial values only. We now study the effects at other latitudes. Amongst the various passes (about 1200) for the period Nov. 2, 1979 - Jan. 18, 1980, there are a few during magnetically disturbed periods. Figure 5 shows the latitudinal variation of ΔH for the Dusk pass No. 184 which occurred at an equatorial longitude of about -79° i.e. 79° W. The original values are represented by the third plot (Figure 5(a), thin full line) and show a minimum at about -15° latitude. However, before concluding that the minimum is really at about -15° , it is necessary to check whether there is any permanent ground magnetic anomaly effect in this region. For this, the average latitudinal variation of six quiet-day (Dst within ± 10) Dusk passes which occurred in the longitude belt 75° - 80° W was evaluated. The top curve (crosses) in Figure 5(b) shows the average pattern. As can be seen, the minimum at about -15° latitude is an inherent feature for this longitude belt, probably due to ground anomaly. For a correct estimate of the storm-time effect for pass 184, the top curve (average) should be subtracted from the third curve. The resulting corrected storm-time effect is shown by the second curve (Figure 5(c), full thick line) which shows a rather flat latitude distribution of storm-time ΔH for this pass.

To study the latitude distribution of storm-time effect for other passes, it was necessary to establish first the base levels i.e. average quiet-day latitudinal patterns of ΔH , ΔX , ΔY and ΔZ . For this, all passes were first sorted out according to 5° longitude belts viz, $\pm(0$ to $5^\circ)$, $\pm(5^\circ$ to $10^\circ)$ $\pm(175^\circ$ to $180^\circ)$ and then, in each group, the latitudinal patterns of all the quiet-day passes (Dst within ± 10) were averaged. Figure 6(a), (b), (c), (d) show the average quiet day patterns for ΔH for Dusk (left half) and Dawn (Right half) for successive 5° longitude belts. In general, patterns for Dusk and Dawn are roughly similar, indicating that there are some inherent ground anomaly effects common to both. If so, an average of the two should be a better estimate of such anomalies. Figure 7(a), (b), (c), (d) (left half) show a plot of ΔH (Dusk + Dawn)/2. A considerable anomaly is noticed in several longitude belts, notably the Bangui anomaly (Figure 7c) at about $6^\circ N$ in the 10 - $20^\circ E$ longitudes.

In a similar way, the factor ΔH (Dusk-Dawn)/2 would eliminate such a ground anomaly and one would obtain a measure of the difference in diurnal variation effects at Dusk and Dawn. The right half of Figure 7 shows ΔH (Dusk-Dawn)/2 (full lines). Changes of the order of a few nT are noticed, though the patterns are different in different longitude belts. To check whether the minima have any relationship with the dip equator rather than geographical equator, vertical arrows indicate the position of the dip equator. In general, it seems that the minima do coincide with the dip equator. The crosses and dashed lines represent the X component. The H and X components show almost identical variations.

Figure 8(a), (b), (c), (d) show ΔY (Dusk) on the left half and ΔY (Dawn) on the right half. In general, ΔY (Dusk) shows much larger variations than ΔY (Dawn). In a recent paper, Maeda et al. (1982) have showed this effect from the Magsat data and have commented that the D variation (i.e. Y variation) appears everyday on the low-latitude dusk side and is antisymmetric about the dip equator. In Figure 8, the vertical arrows show the position of the dip equator in

the various longitude belts. It does seem that the Y component has a strong transition from one side of the arrow to the other. However, some ΔY (Dawn) plots do show some variations, indicating that some ground anomaly effect may be present even in the Y component, for some longitudes. If so, ΔY (Dusk + Dawn)/2 would be a rough estimate of the same, whereas ΔY (Dusk-Dawn)/2 would be a pure estimate of the diurnal variation effect.

Figure 9 shows ΔZ (Dusk) and ΔZ (Dawn), only for the longitude region -90° to 0° , in which the dip equator has large latitudinal excursions, from $13^{\circ}S$ to $10^{\circ}N$. Here again, ΔZ (Dusk) shows larger fluctuations. However, ΔZ (Dawn) shows large trends.

Figure 10 shows ΔY (Dusk-Dawn)/2 in the left half and ΔZ (Dusk-Dawn)/2 in the right half, for the longitude belt -90° to 0° . The arrows indicate the position of the dip equator. For ΔY , a clear transition from one side of the arrow to the other is seen. For ΔZ , such an effect is not clear.

Figure 11 shows the average curves for all longitudes. The upper half is for geographical latitudes -30° to $+30^{\circ}$. In the first column, the H variations (full lines) are almost the same as the X variations (crosses) and both have small magnitudes. In the second column for ΔY also, the variations are small. In all columns, the top curve is for Dusk, the second curve for Dawn, the third for (Dusk + Dawn)/2 and the fourth for (Dusk - Dawn)/2. In the last column, the Z variations are also small except for some trends. Thus the geographical latitude distributions of the variations of H, X, Y, Z are all small.

The lower half of Figure 11 represents average distributions for dip latitudes. Here, the most conspicuous variation is that of ΔY (Dusk). In contrast, ΔY (Dawn) is negligibly small and hence both ΔY (Dusk + Dawn)/2 and ΔY (Dusk - Dawn)/2 are similar to

ΔY (Dusk) but roughly half in magnitude. Thus, amongst all these parameters, only ΔY (Dusk) has a significant dip-latitude dependence.

Maeda et al. (1982) have interpreted this dependence as indicative of meridional current systems in the equatorial ionosphere. However, we are not quite sure about the association of these currents with the equatorial electrojet, as envisaged in the Untiedt (1967) and Sugiura and Poros (1969) models. Because in that case, the electrojet itself should be strong. In the present case, the X component shows very little variations, showing that the main electrojet is not strong at dusk hours. Thus, strong meridional currents cannot exist at dusk because of the electrojet which is weak. To us, it seems that the presence of strong ΔY in the absence of strong ΔX indicates the usual Sq pattern of roughly circular currents, which, near midday, are mostly east-west but which, at dawn or dusk, are mostly north-south. In the equatorial region, longitudinal differences could then arise from the excursions of the Sq current system of one hemisphere into the other (Hutton 1967 a,b) and/or due to solstitial Sq currents through the magnetosphere (Van Sabben, 1970). Since the present investigation is not directly related to the quiet-time variations, we will not discuss or explore this matter any further but will only use these quiet-time patterns as base levels for subtracting from the disturbed-day patterns. The quiet-day pattern values for ΔH , ΔX , ΔZ for Dusk, Dawn, (Dusk + Dawn)/2 and (Dusk-Dawn)/2 are given in Tables 2,3 ... etc., as these may prove useful for other workers.

As shown in Figure 1, the period Nov. 11-15, 1979 was a storm period. On Nov. 13, pass 170 was only moderately disturbed ($Dst = -17$). However, the successive passes 171, 172 etc. were highly disturbed. In Figure 12, we show the latitude distributions of ΔH (full lines) and ΔX (crosses) for the Dusk passes 170-181 in the left half, continued for pass 182-188 in the upper right half. The vertical arrows indicate the position of the dip equator. All passes are corrected for base levels as illustrated in Figures 5.

It seems from Figure 12 that the ΔH or ΔX variations are not always symmetric about the geographical or dip equators. In the early passes, the Northern Hemisphere has larger storm effects. By about pass 178, the pattern is roughly symmetrical. For later passes, the Southern Hemisphere has larger storm effects. Thus, the storm-effects are not only not maximum either at the geographical or the dip equator but the nature of the north-south asymmetry changes during the course of the storm. In this case, the earlier part of the storm was stronger in the Northern Hemisphere. However, in the bottom of the right half of Figure 12, we show similar plots for the Dusk passes 936 to 939, which occurred during a disturbed period. Here, the storm-effect is larger in the Southern Hemisphere even in these initial passes of this storm of Jan.80. Thus, the conclusion would be that the north-south asymmetry could exist in any form at any stage of the storm.

In the middle of the right half of Figure 12, we show a similar plot for the disturbed day Dawn pass 184. In contrast to the Dusk pass 184, the Dawn pass shows very erratic latitudinal distribution, with no semblance of any maximum storm effect near either the geographic or the dip equator. Instead, one notices maximum storm effects at about $\pm 15^{\circ}$ geographical latitudes. For other Dawn passes on disturbed days, some other, different, patterns were noticed. Thus, the storm-time latitude distribution of ΔH or ΔX for Dawn passes seems to be erratic. We suspect that a considerable part of these erratic patterns as well as the north-south asymmetries may be related to latitudinal meandering of the central plane of the magnetospheric ring current and/or complications due to field-aligned currents, different in different local time zones.

Figure 13 shows similar plots for the Y component. Here, symmetry about the geographic or the dip equator seems to be more an exception than a rule. In general, the Y variation is erratic, with no systematic variation from one pass to the next, again probably indicating an erratic meandering of the central plane of the magnetospheric ring current during the course of the storm.

Figure 14 shows the latitudinal patterns of ΔX and ΔY averaged for all the storm-time passes 170-188. The upper half has geographical latitude as abscissa. ΔX shows a maximum storm effect (largest negative values) near the geographical equator (at about 5° S) with roughly a $\cos \theta$ dependence on either side. However, ΔY does not show any such effect clearly. Instead, one observes a minimum storm effect (smallest negative values) at about -10° i.e 10° South latitude. Thus, on the average, the central plane of the storm-time ring current is almost coincident with the geographical equatorial plane, with a probable shift slightly southwards.

The lower half of Figure 14 shows similar average latitudinal patterns of ΔX and ΔY with dip latitude as abscissa. As can be seen, no clear latitude dependence is noticed, for either ΔX or ΔY . Thus, the storm-time ring current does not seem to be influenced by the dip equator.

4. Summary of the significant results

The average latitude dependence of the storm-time H or X variation is roughly symmetric about the geographic equator but not about the dip equator. Also, for individual passes, the pattern is generally not symmetric, the storm-effects being significantly larger in one hemisphere as compared to the other. For the Y component, no clear latitude dependence is noticed.

5. Future plans

The present investigation is now concluded.

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Caption for Figures

Fig. 1 - Plot of ΔH_0 (i.e. ΔH at equatorial crossing, original as well as corrected for base level), ΔB (total field at dip equator) and D-EQL (Equatorial disturbance index for ground), for Nov. 11-15, 1979 for Dawn (full lines) and Dusk (crosses and dashes).

Fig. 2 - Upper half, ΔH_0 Dusk (original and corrected) versus ΔB Dusk (original). Lower half, ΔH_0 Dawn (original and corrected) versus ΔB Dawn (original).

Fig. 3 - ΔH_0 Dusk (original and corrected) versus D-EQL Dusk (by Sugiura, for ground stations). Regression lines for direct and reverse correlations are marked.

Fig. 4 - ΔH_0 Dawn (original and corrected) versus D-EQL Dawn (by Sugiura, for ground stations). Regression lines for direct and reverse correlations are marked.

Fig. 5 - Latitudinal variation of ΔH for
(a) The specific disturbed-day Dusk pass No. 184 at
longitude -79° .
(b) Quiet day base level obtained as average for six quiet-
day passes in the longitude belt 75° - 80° W.
(c) The difference (a) minus (b).

Fig. 6 - Average latitudinal patterns of ΔH (Dusk) (left half) and ΔH (Dawn) (right half) for successive 5° longitude belts for the longitude ranges (a) longitude -180° to -90° , (b) longitude -90° to 0° , (c) longitude 0° to $+90^{\circ}$ and (d) longitude $+90^{\circ}$ to $+180^{\circ}$, + = East, - = West.

Fig. 7 - Average latitudinal variations for ΔH (Dusk + Dawn)/2 (left half) and ΔH (Dusk-Dawn)/2 (right half, full lines) for successive 5° longitude intervals for the longitude ranges (a) longitude -180° to -90° , (b) longitude -90° to 0° , (c) longitude 0° to $+90^{\circ}$ and (d) longitude $+90^{\circ}$ to $+180^{\circ}$. In the right half, crosses and dashes represent the X component and vertical arrows indicate the position of the dip equator.

Fig. 8 - Average latitudinal variations for ΔY (Dusk) (left half) and ΔY (Dawn)(right half) for successive 5° longitude belts for the longitudes ranges (a) longitude -180° to -90° , (b) longitude -90° to 0° , (c) longitude 0° to $+90^{\circ}$ and (d) longitude $+90^{\circ}$ to $+180^{\circ}$. Vertical arrows indicate the position of the dip equator.

Fig. 9 - Average latitudinal variations for ΔZ (Dusk) (left half) and ΔZ (Dawn) (right half) for 5° longitude belts in the longitude range -90° to 0° , in which the position of the dip equator (vertical arrows) changes rapidly.

Fig. 10 - Average latitudinal variations for ΔY (Dusk-Dawn)/2 (left half) and ΔZ (Dusk-Dawn)/2 (right half) for 5° longitude belts in the longitude range -90° to 0° . Vertical arrows indicate the position of the dip equator.

Fig. 11 - Average latitudinal variations for ΔH and ΔX (first column, full lines and crosses), ΔY (second column) and ΔZ (third column) for Dusk, Dawn, (Dusk + Dawn)/2,(Dusk-Dawn)/2. The upper half has abscissa as geographical latitude while the lower half has abscissa as dip latitude.

Fig. 12 - Latitudinal variation of ΔH (full lines) and ΔX (crosses and dashes) corrected for base levels, for the Dusk passes 170-188 during the storm of Nov. 11-15, 1979, as also for the Dawn pass 184 and for the Dusk passes 936-939 in Jan. 1980. The pass number, longitude and Dst are indicated for each pass. Vertical arrows indicate the position of the dip equator.

Fig. 13 - Same as Fig. 12, but for ΔY .

Fig. 14 - Average latitudinal distribution of ΔX and ΔY for the storm-time Dusk passes 170-188 on Nov. 13-14, 1979.
Upper half - For geographical latitudes.
Lower half - For dip latitudes.

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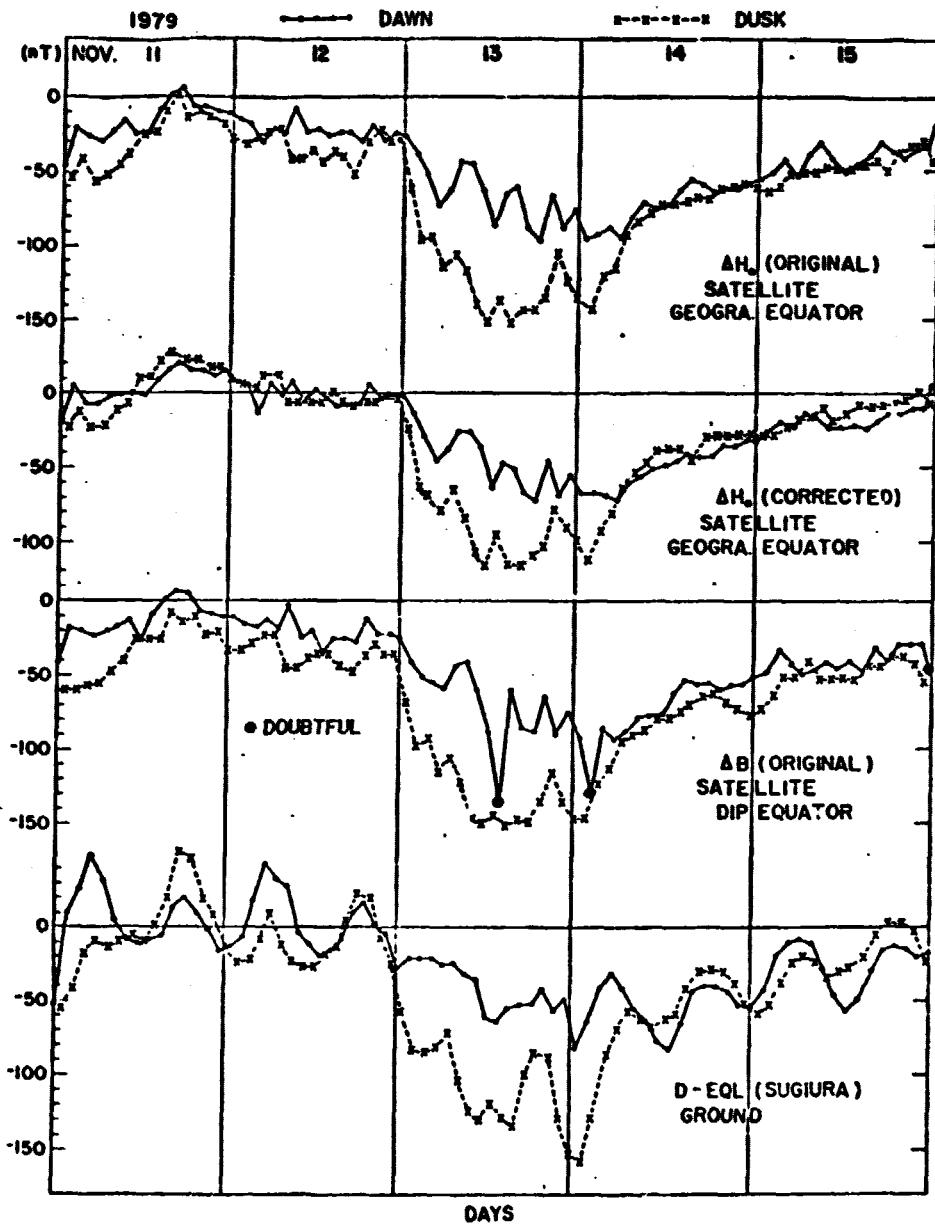


Fig. 1 - Plot of ΔH_0 (i.e. ΔH at equatorial crossing, original as well as corrected for base level), ΔB (total field at dip equator) and D-EQL (Equatorial disturbance index for ground), for Nov. 11-15, 1979 for Dawn (full lines) and Dusk (crosses and dashes).

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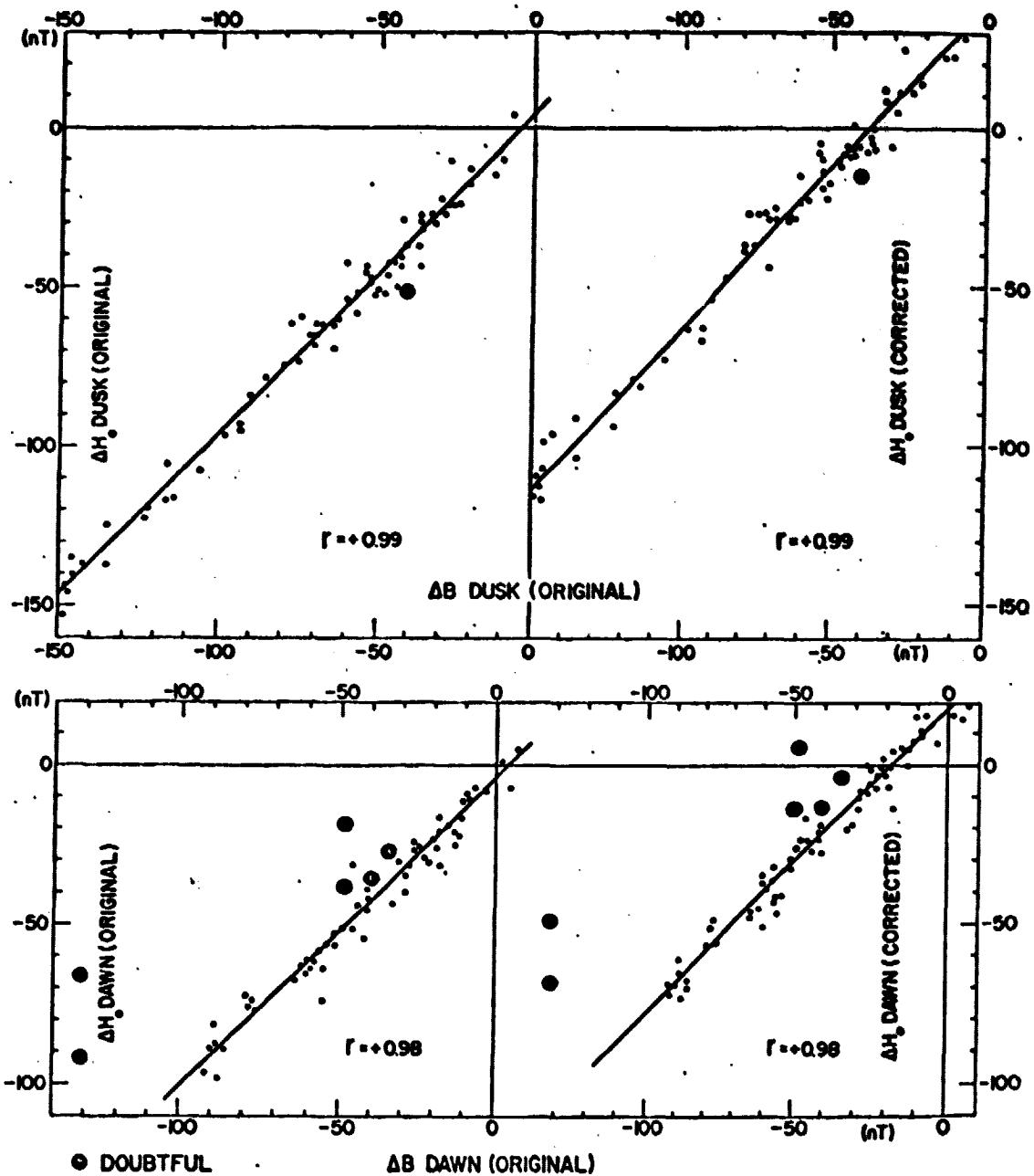


Fig. 2 - Upper half, ΔH_0 Dusk (original and corrected) versus ΔB Dusk (original). Lower half, ΔH_0 Dawn (original and corrected) versus ΔB Dawn (original).

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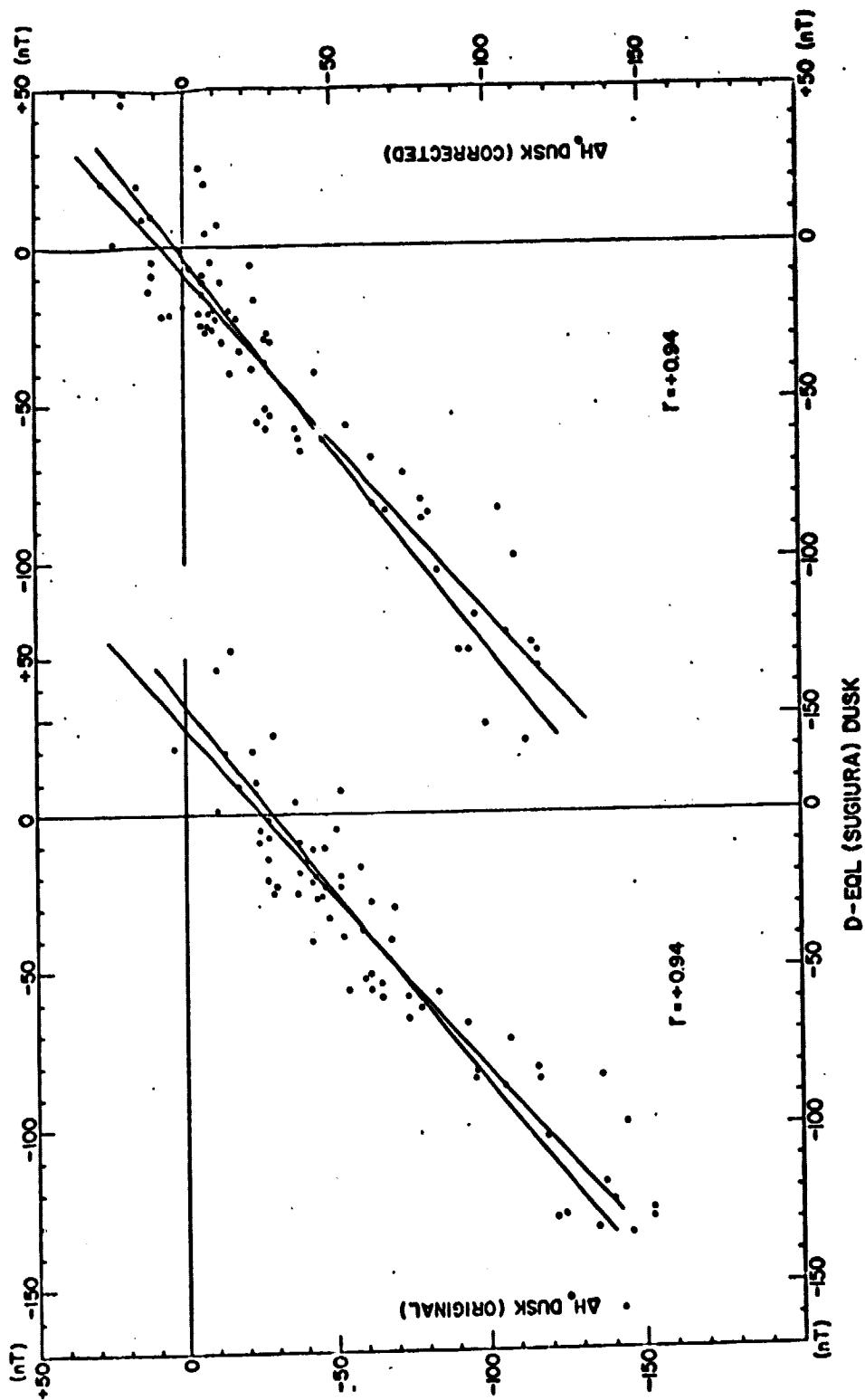


Fig. 3 - ΔH_0 Dusk (original and corrected) versus D-EQL Dusk (by Sugiura, for ground stations). Regression lines for direct and reverse correlations are marked.

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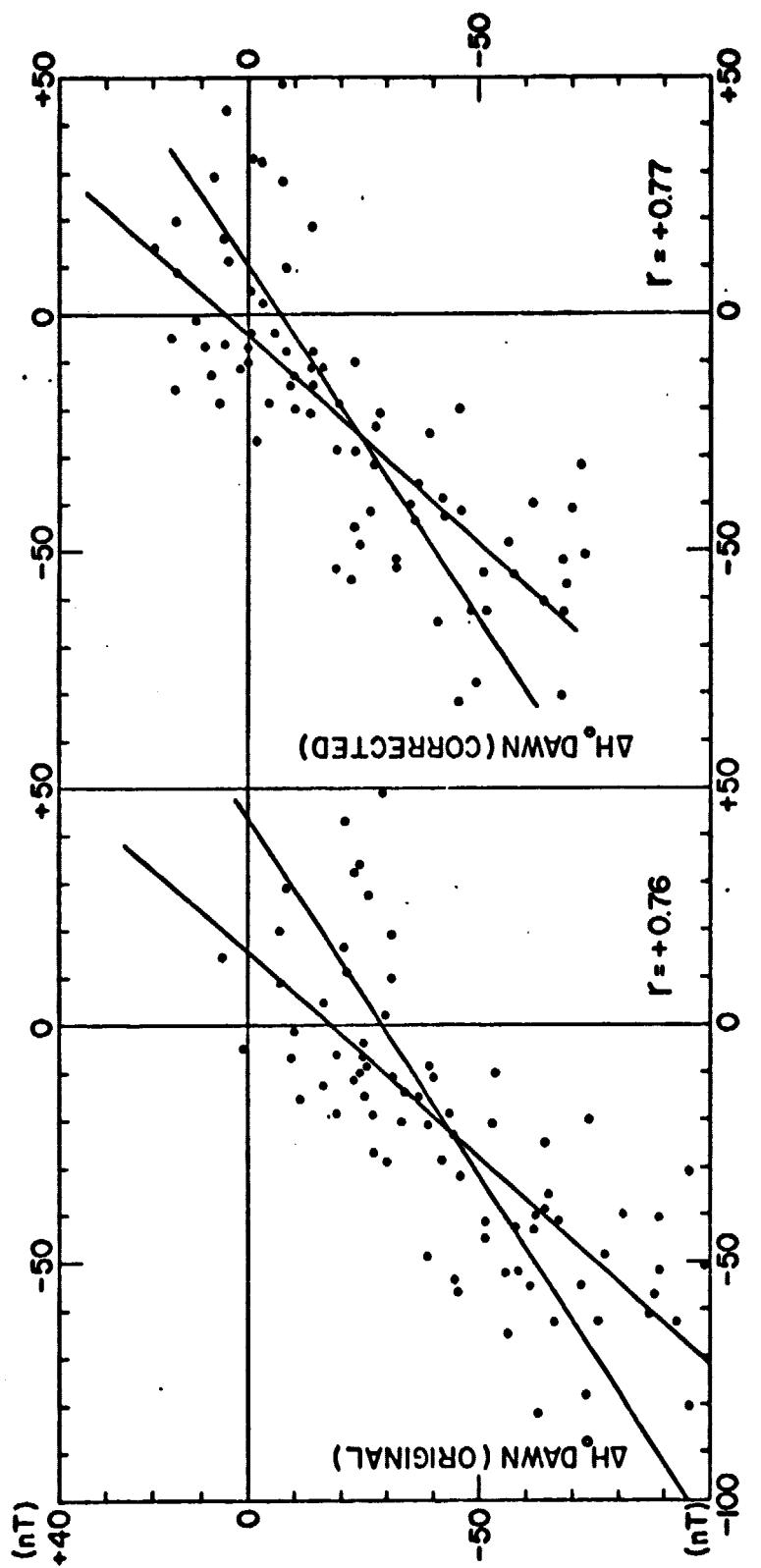


Fig. 4 - ΔH_0 Dawn (original and corrected) versus D-EQL Dawn (by Sugiura, for ground stations).
Regression lines for direct and reverse correlations are marked.

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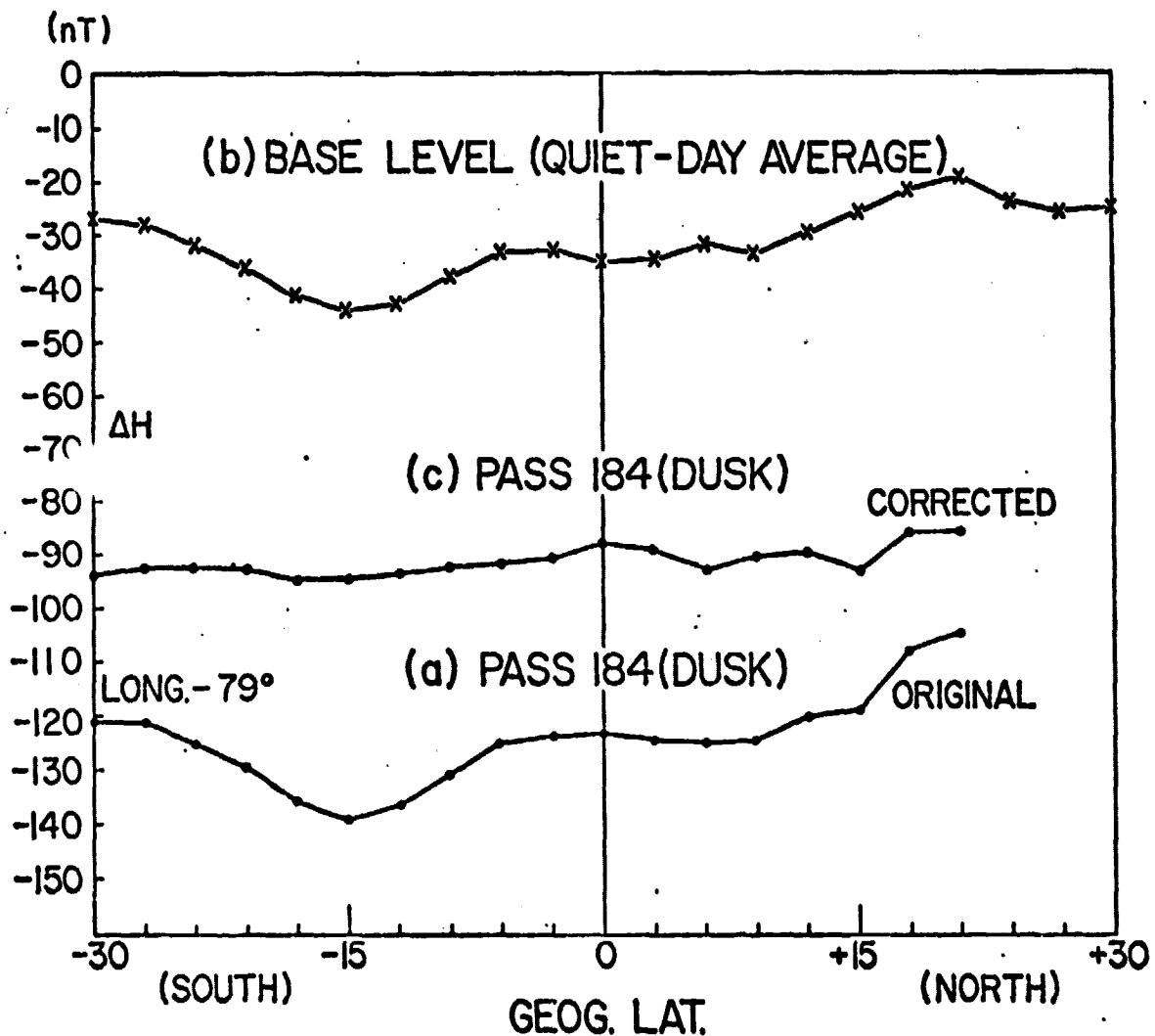


Fig. 5 - Latitudinal variation of ΔH for
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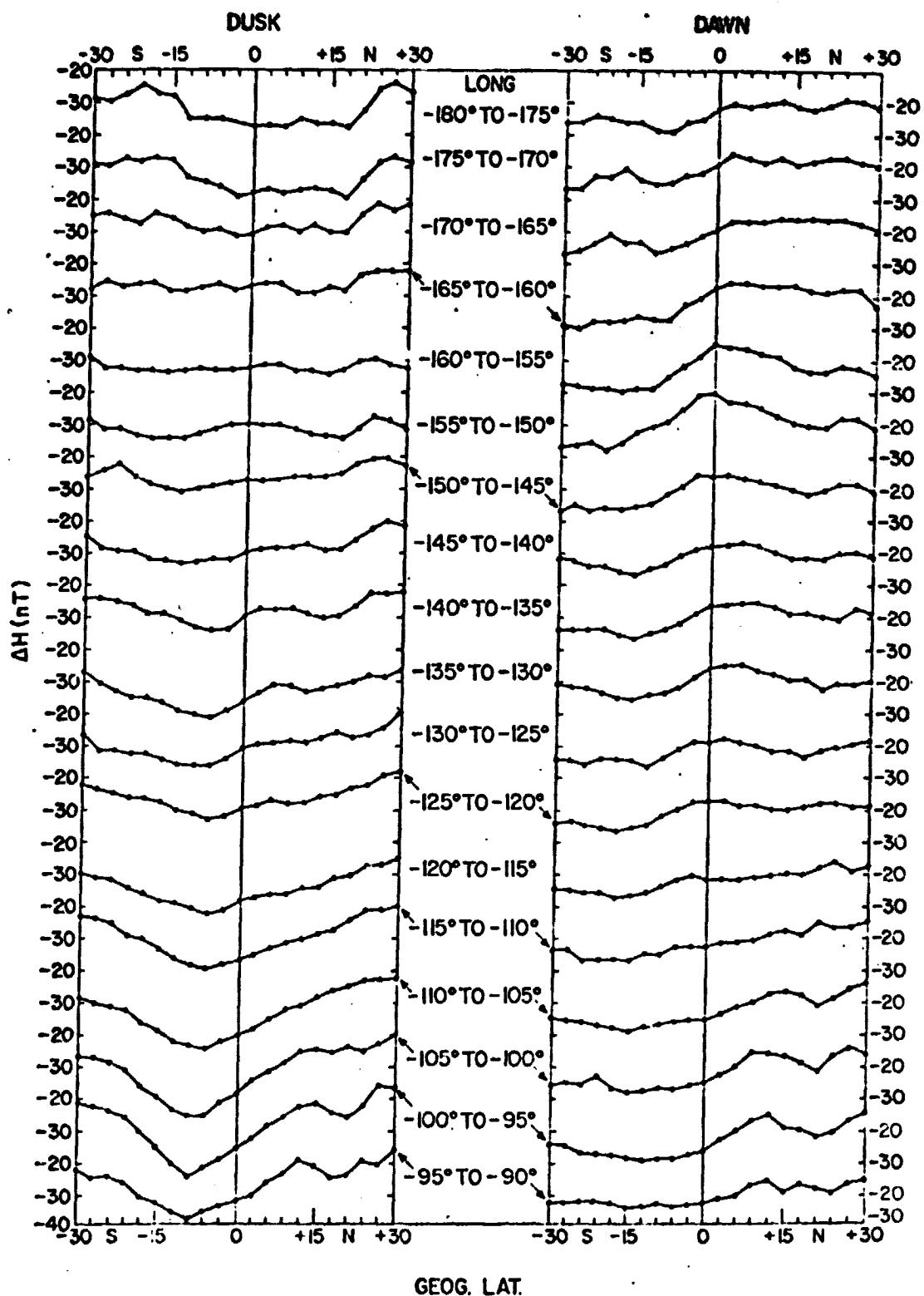


Fig. 6(a) - Average latitudinal patterns of ΔH (Dusk) (left half) and ΔH (Dawn) (right half) for successive 5° longitude belts for the longitude ranges, longitude -180° to -90° .
+ = East, - = West

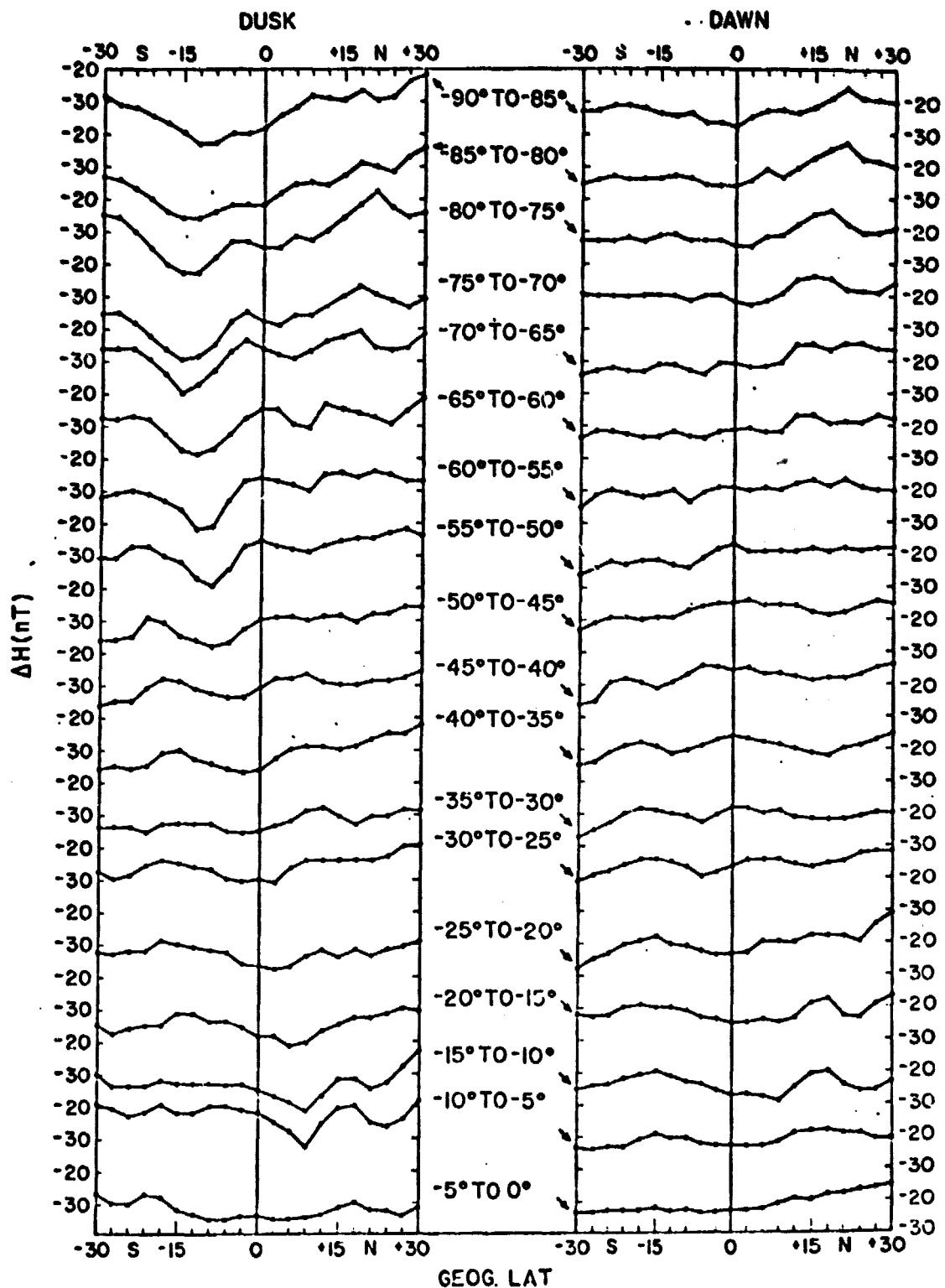


Fig. 6(b) - Average latitudinal patterns of ΔH (Dusk) (left half) and ΔH (Dawn) (right half) for successive 5° longitude belts for the longitude ranges, longitude -90° to 0° .
+ = East, - = West.

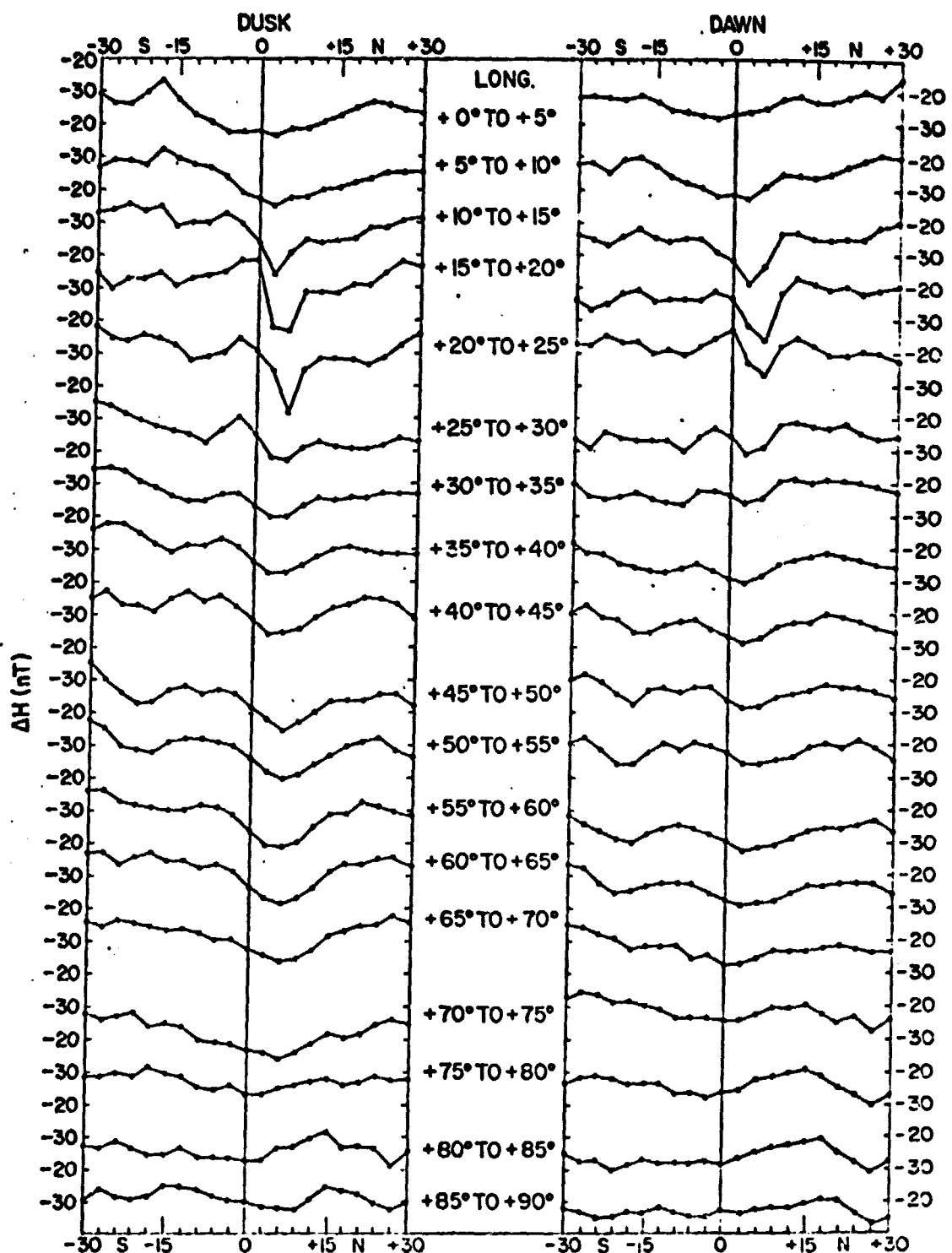


Fig. 6(c) - Average latitudinal patterns of ΔH (Dusk) (left half) and ΔH (Dawn) (right half) for successive 5° longitude belts for the longitude ranges, longitude 0° to +90°.
+ = East, - = West.

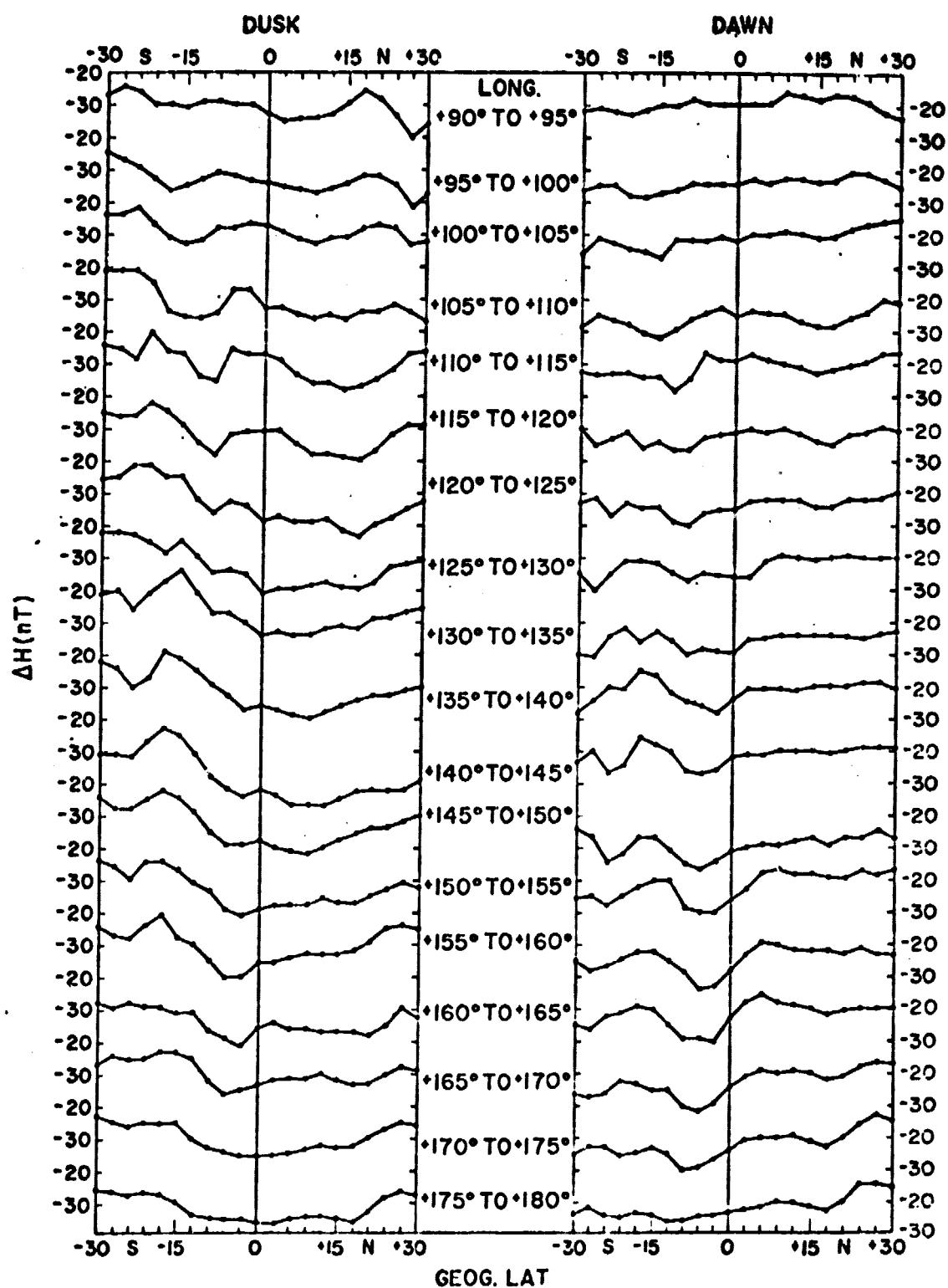


Fig. 6(d) - Average latitudinal patterns of ΔH (Dusk) (left half) and ΔH (Dawn) (right half) for successive 5° longitude belts for the longitude ranges, longitude $+90^\circ$ to $+180^\circ$.
 + = East, - = West.

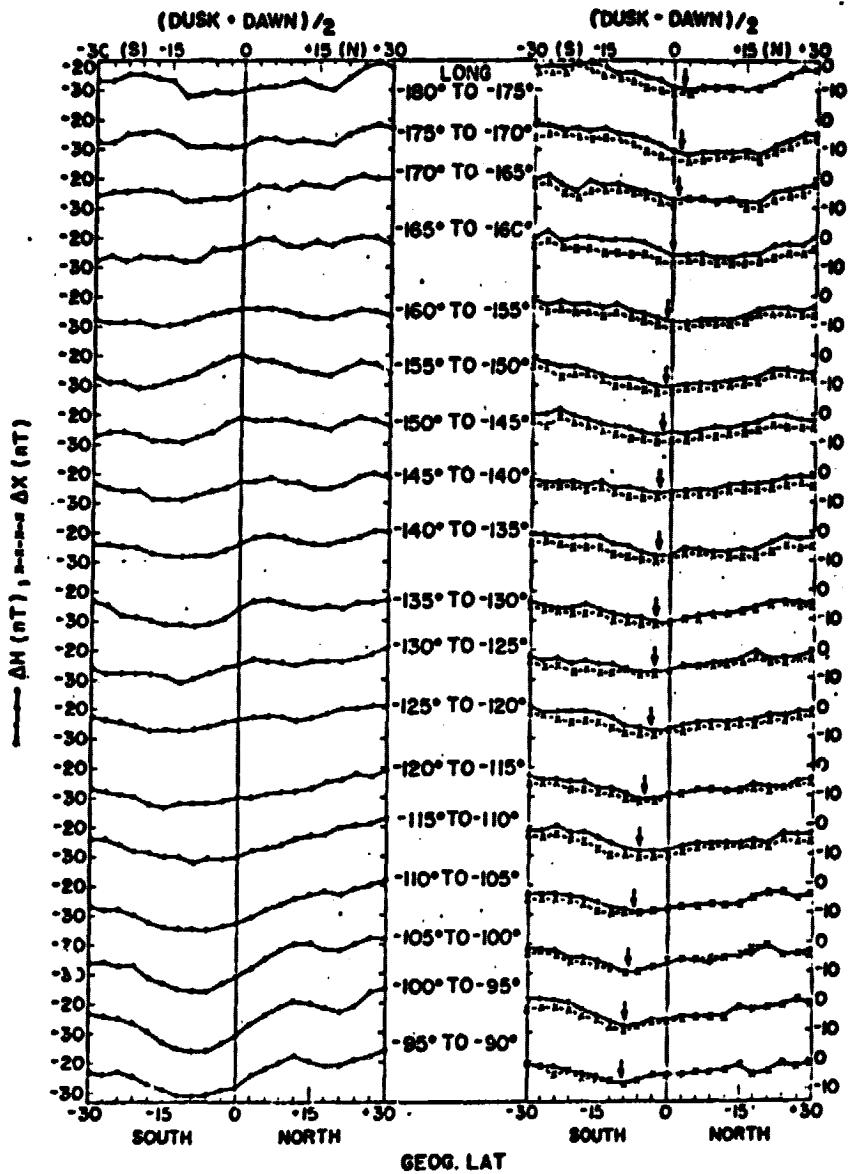


Fig. 7(a) - Average latitudinal variations for ΔH (Dusk+Dawn)/2 (left half) and ΔH (Dusk-Dawn)/2 (right half, full lines) for successive 5° longitude intervals for the longitude ranges, longitude -180° to -90° . In the right half, crosses and dashes represent the X component and vertical arrows indicate the position of the dip equator.

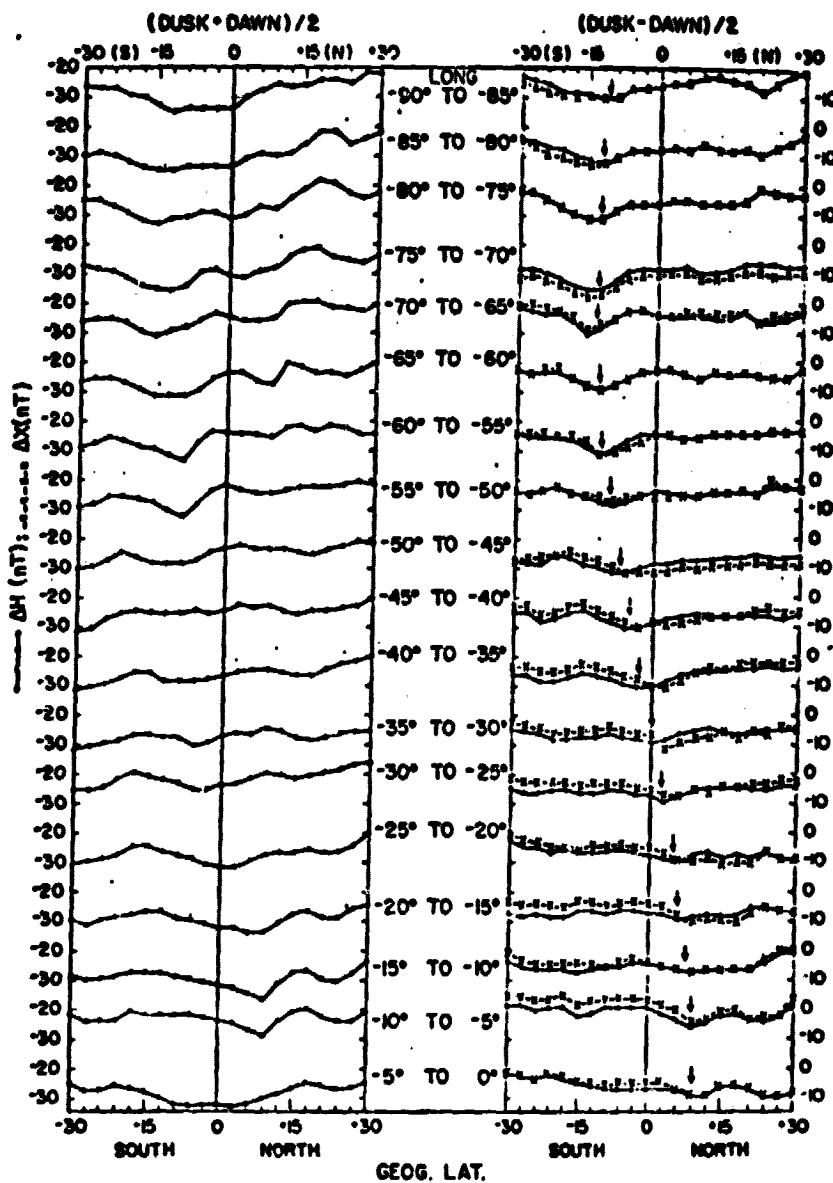


Fig. 7(b) - Average latitudinal variations for ΔH (Dusk+Dawn)/2 (left half) and ΔH (Dusk-Dawn)/2 (right half, full lines) for successive 5° longitude intervals for the longitude ranges, longitude -90° to 0° . In the right half, crosses and dashes represent the X component and vertical arrows indicate the position of the dip equator.

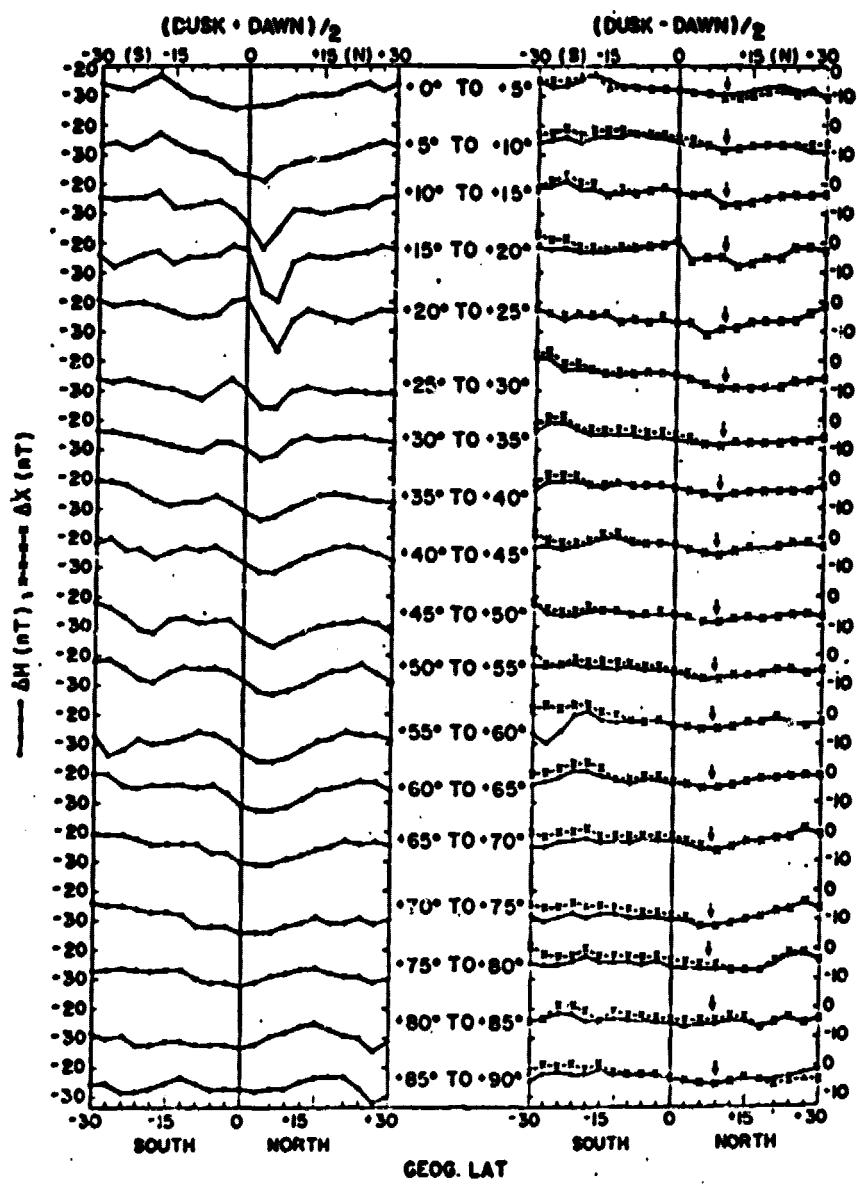


Fig. 7(c) - Average latitudinal variations for ΔH (Dusk+Dawn)/2 (left half) and ΔH (Dusk-Dawn)/2 (right half, full lines) for successive 5° longitude intervals for the longitude ranges, longitude 0° to $+90^{\circ}$. In the right half, crosses and dashes represent the X component and vertical arrows indicate the position of the dip equator.

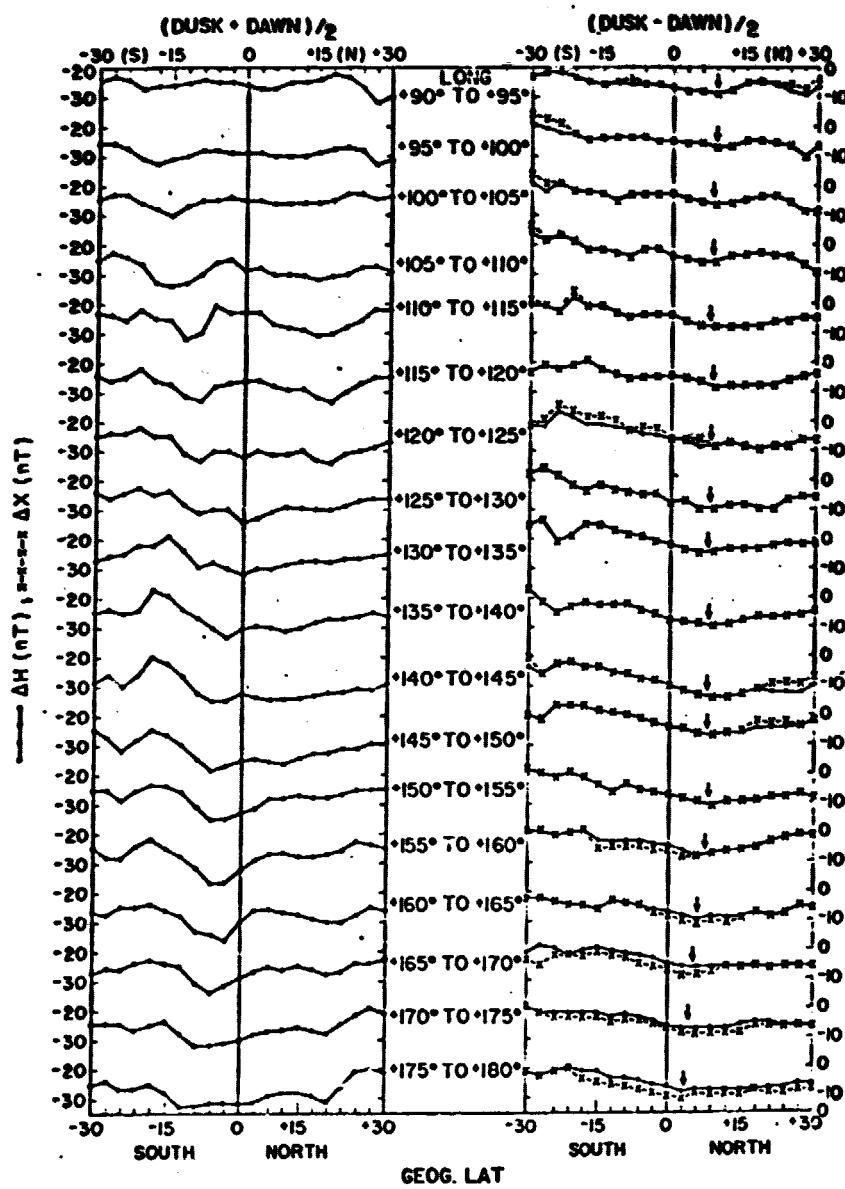


Fig. 7(d) - Average latitudinal variations for $\Delta H(\text{Dusk+Dawn})/2$ (left half) and $\Delta H(\text{Dusk-Dawn})/2$ (right half, full lines) for successive 5° longitude intervals for the longitude ranges, longitude $+90^\circ$ to $+180^\circ$. In the right half, crosses and dashes represent the X component and vertical arrows indicate the position of the dip equator.

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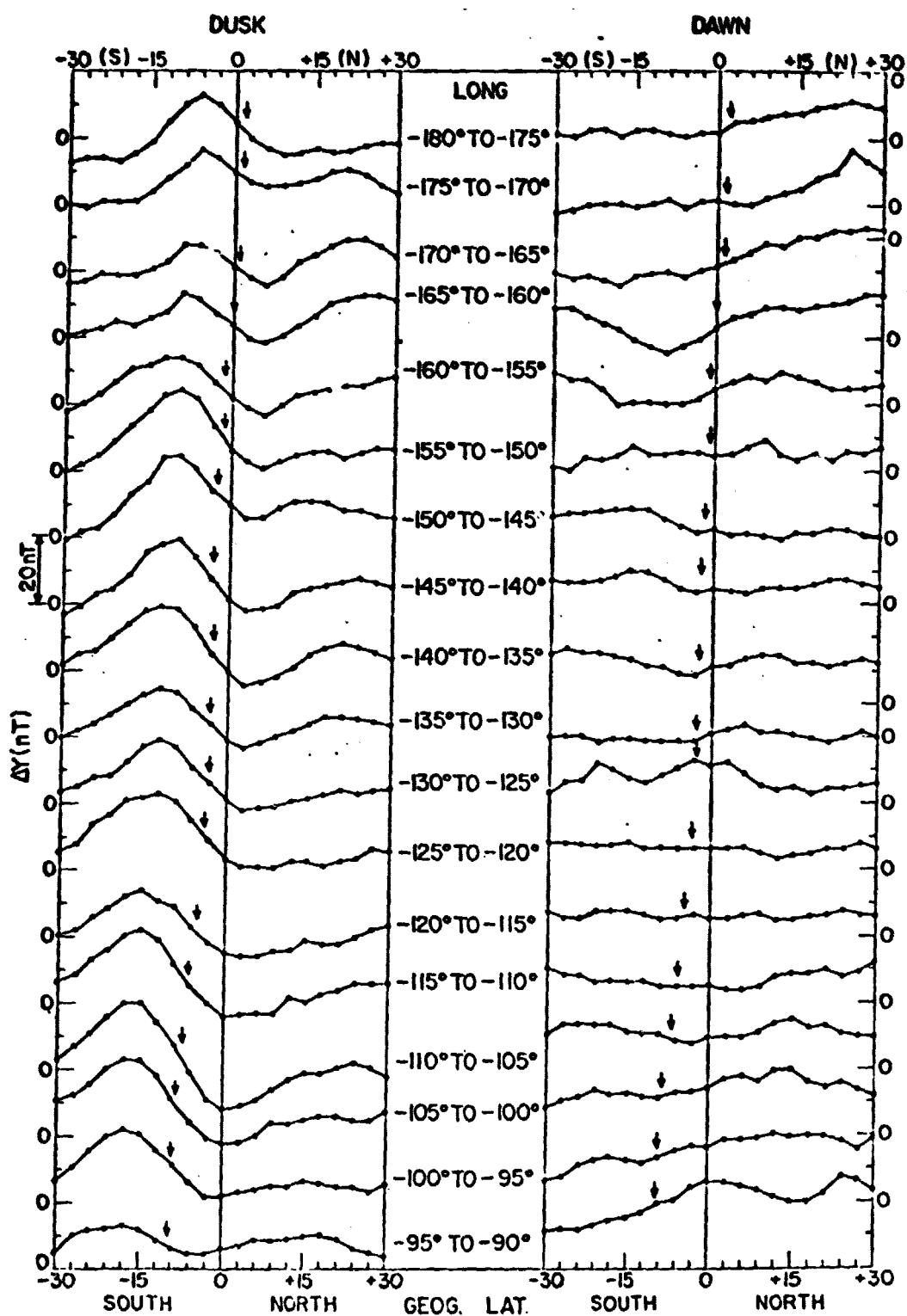


Fig. 8(a) - Average latitudinal variations for ΔY (Dusk) (left half) and ΔH (Dawn) (right half) for successive 5° longitude belts for the longitude ranges, longitude -180° to -90° . Vertical arrows indicate the position of the dip equator.

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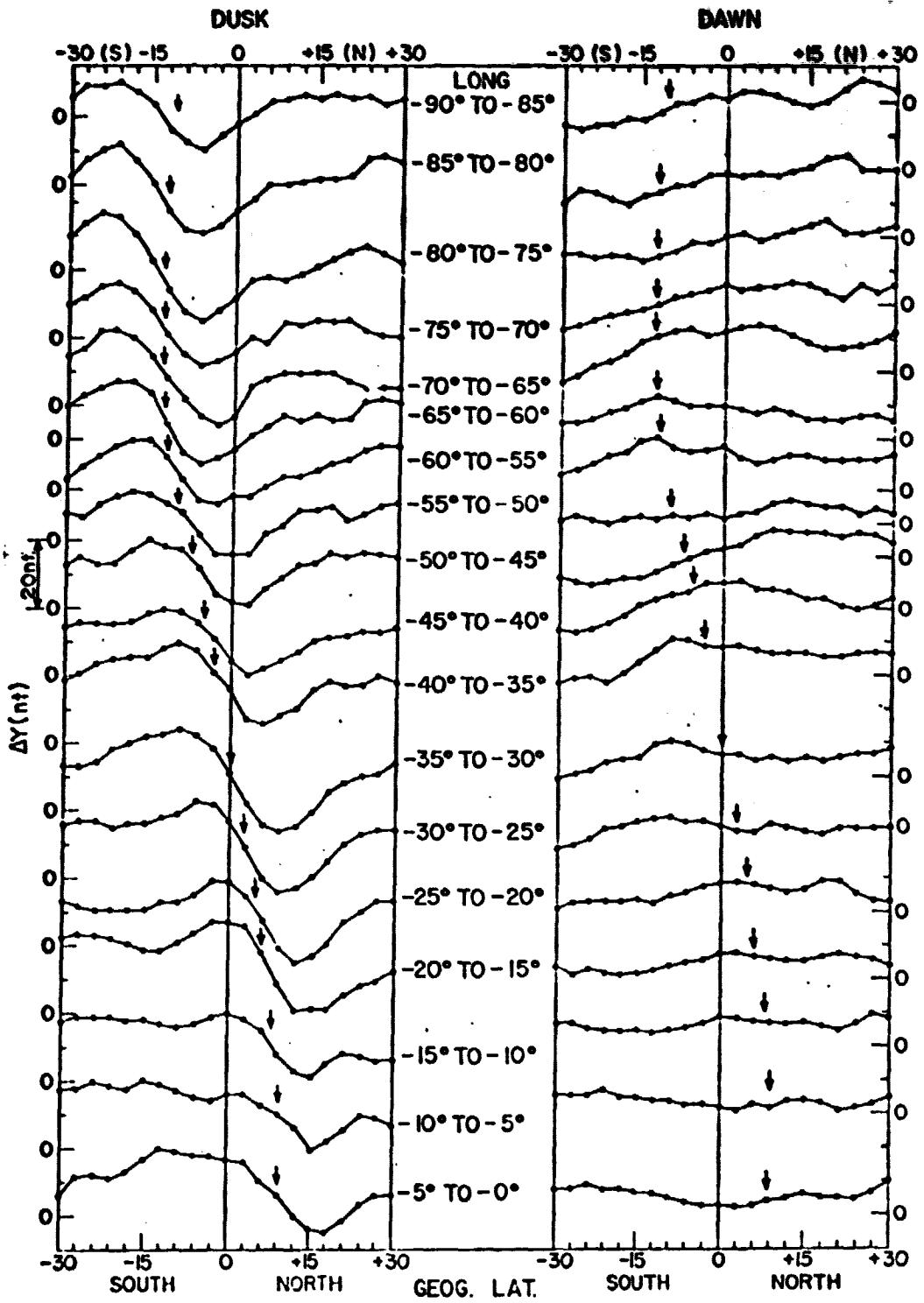


Fig. 8(b) - Average latitudinal variations for ΔY (Dusk) (left half) and ΔY (Dawn) (right half) for successive 5° longitude belts for the longitude ranges, longitude -90° to 0° . Vertical arrows indicate the position of the dip equator.

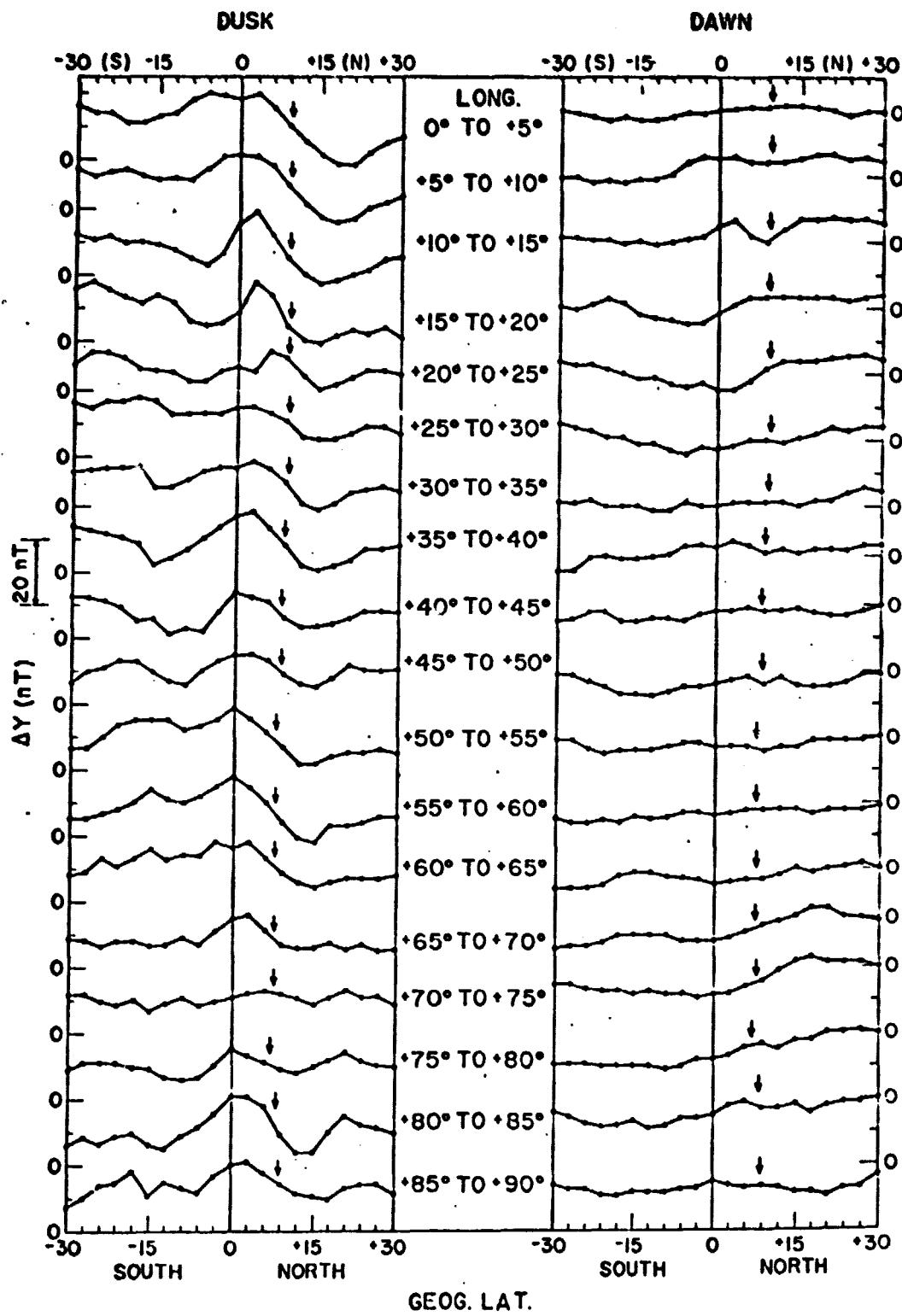


Fig. 8(c) - Average latitudinal variations for ΔY (Dusk) (left half) and ΔY (Dawn) (right half) for successive 5° longitude belts for the longitude ranges, longitude 0° to $+90^{\circ}$. Vertical arrows indicate the position of the dip equator.

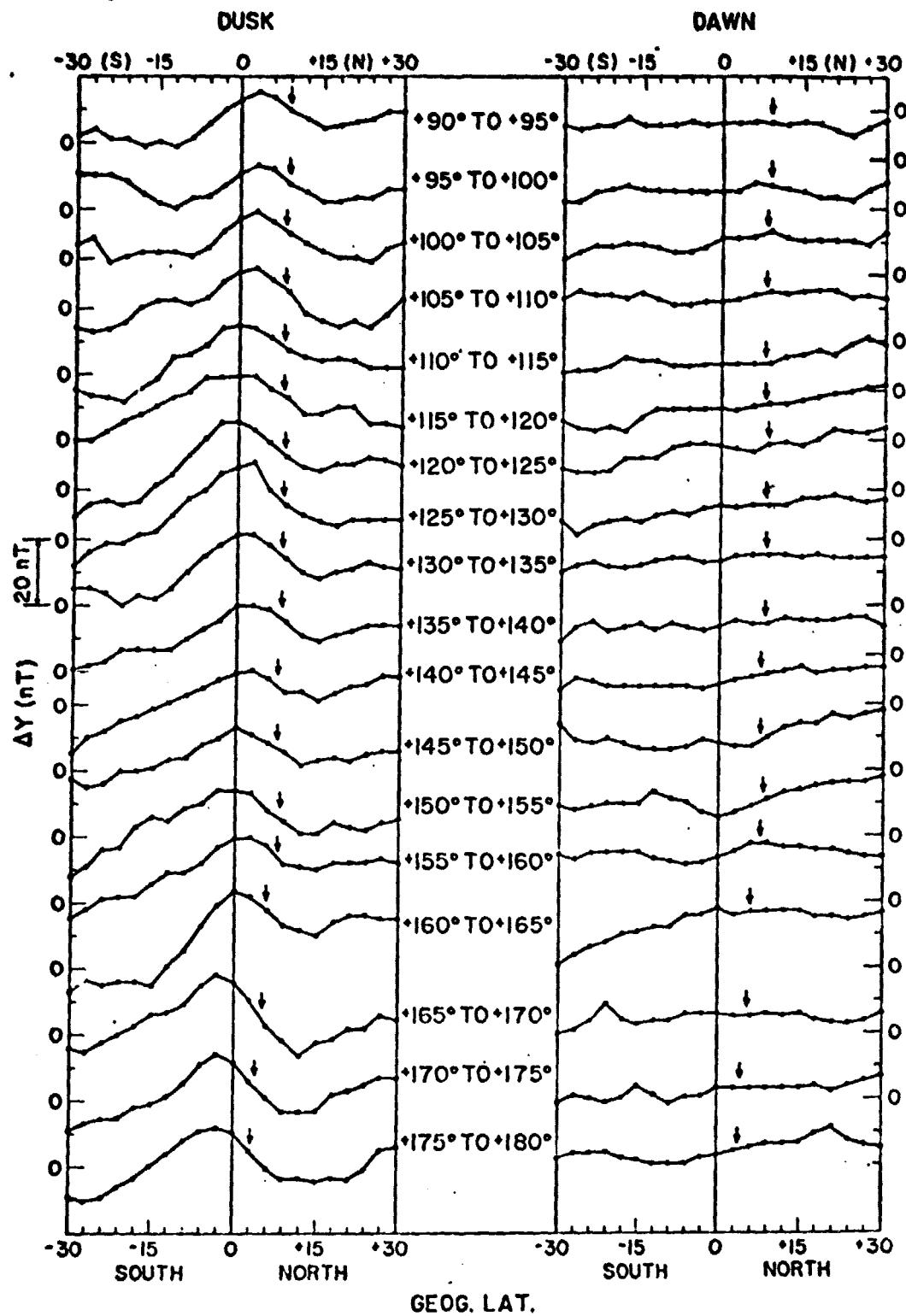


Fig. 8(d) - Average latitudinal variations for ΔY (Dusk) (left half) and ΔY (Dawn) (right half) for successive 5° longitude belts for the longitude ranges, longitude $+90^\circ$ to $+180^\circ$. Vertical arrows indicate the position of the dip equator.

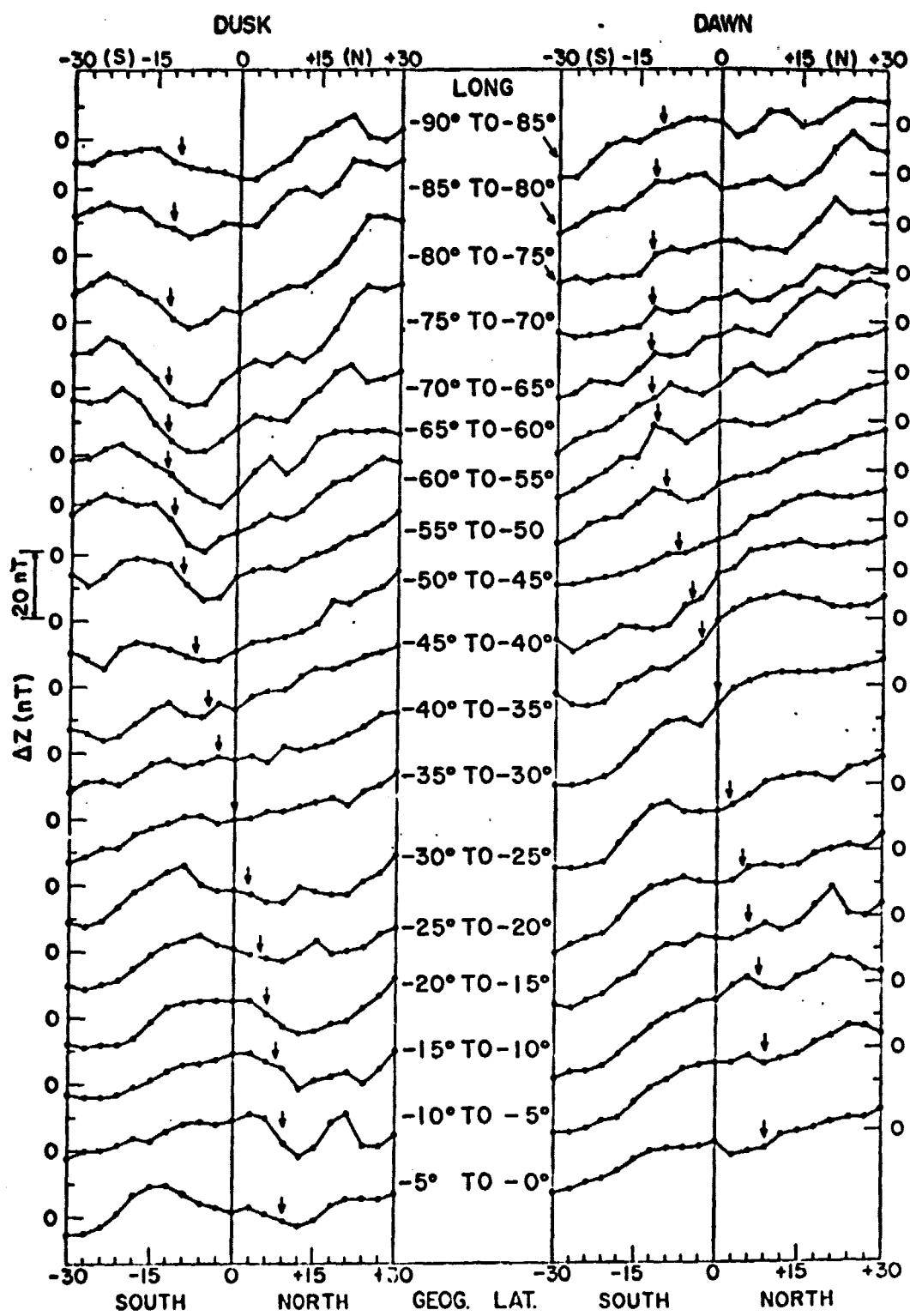


Fig. 9 - Average latitudinal variations for ΔZ (Dusk) (left half) and ΔZ (Dawn) (right half) for 5° longitude belts in the longitude range -90° to 0° , in which the position of the dip equator (vertical arrows) changes rapidly.

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(DUSK-DAWN)/2

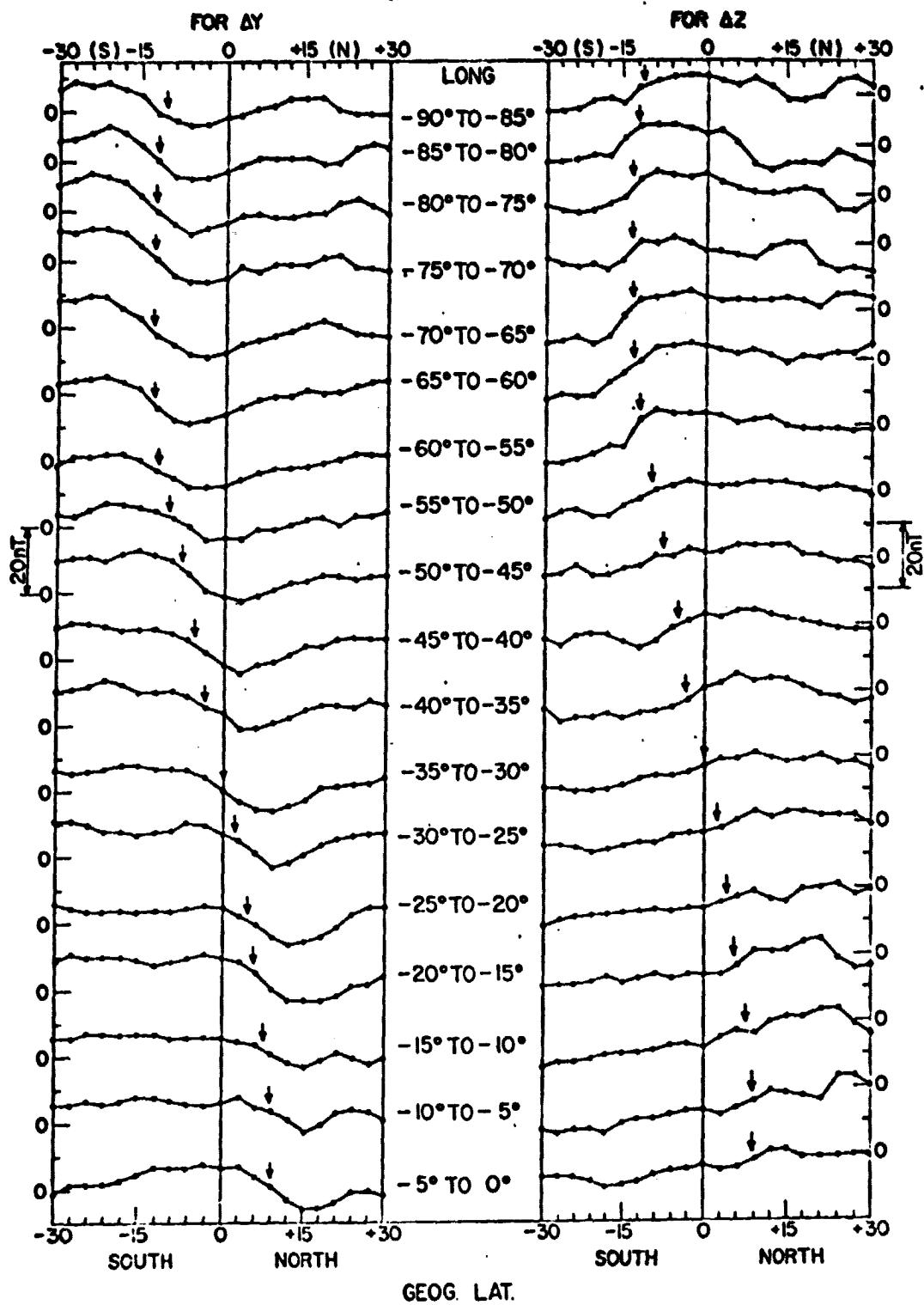


Fig. 10 - Average latitudinal variations for ΔY (Dusk-Dawn)/2 (left half) and ΔZ (Dusk-Dawn)/2 (right half) for 5° longitude belts in the longitude range -90° to 0° . Vertical arrows indicate the position of the dip equator.

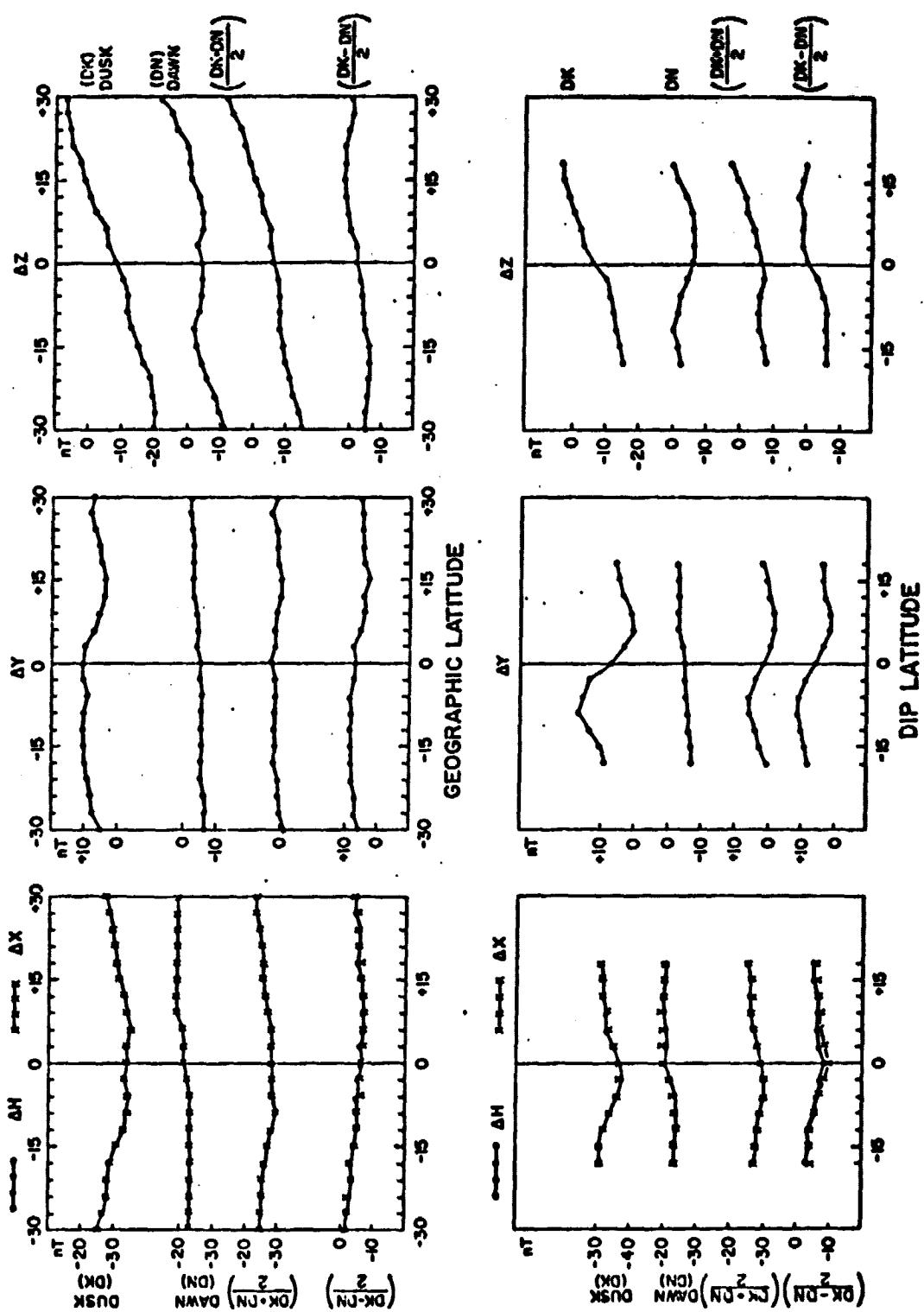


Fig. 11 - Average latitudinal variations for ΔH and ΔX (first column, full lines and crosses), ΔY (second column) and ΔZ (third column) for Dusk, Dawn, $(\text{Dusk}+\text{Dawn})/2$, $(\text{Dusk}-\text{Dawn})/2$. The upper half has abscissa as geographical latitude while the lower half has abscissa as dip latitude.

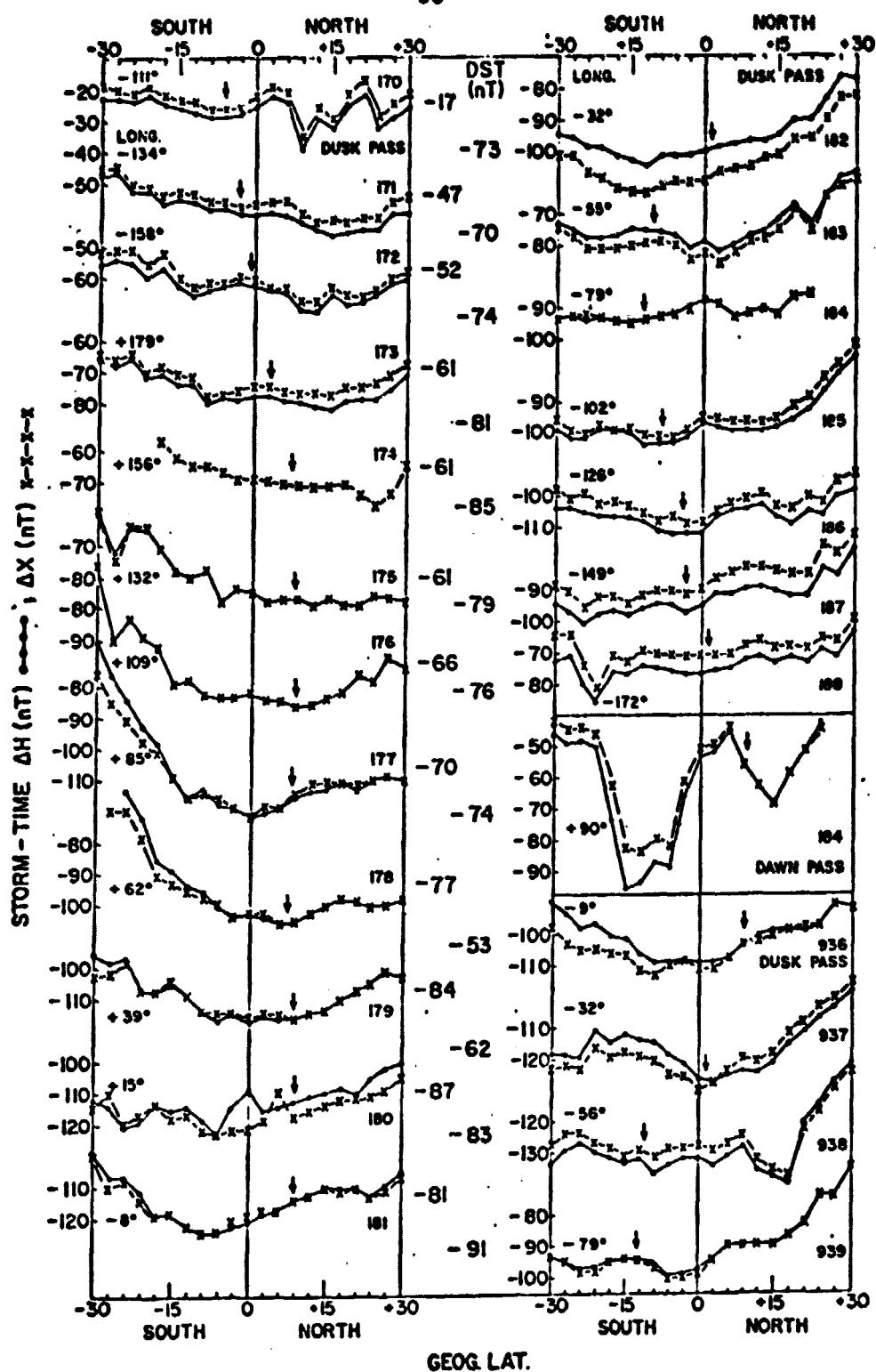


Fig. 12 - Latitudinal variation of ΔH (full lines) and ΔX (crosses and dashes) corrected for base levels, for the Dusk passes 170-188 during the storm of Nov. 11-15, 1979, as also for the Dawn pass 184 and for the Dusk passes 936-939 in Jan. 1980. The pass number, longitude and Dst are indicated for each pass. Vertical arrows indicate the position of the dip equator.

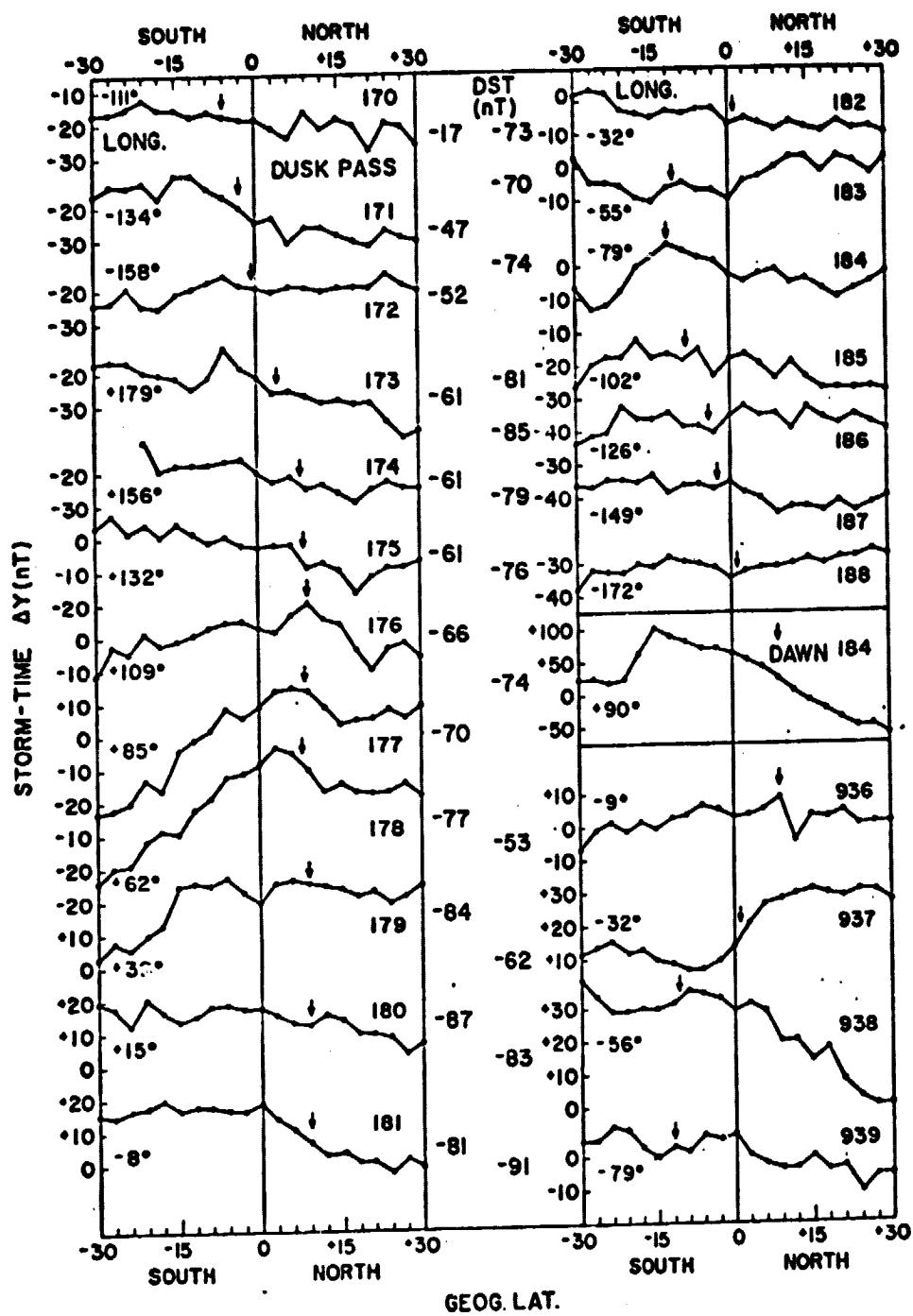


Fig. 13 - Same as Fig. 12, but for ΔY .

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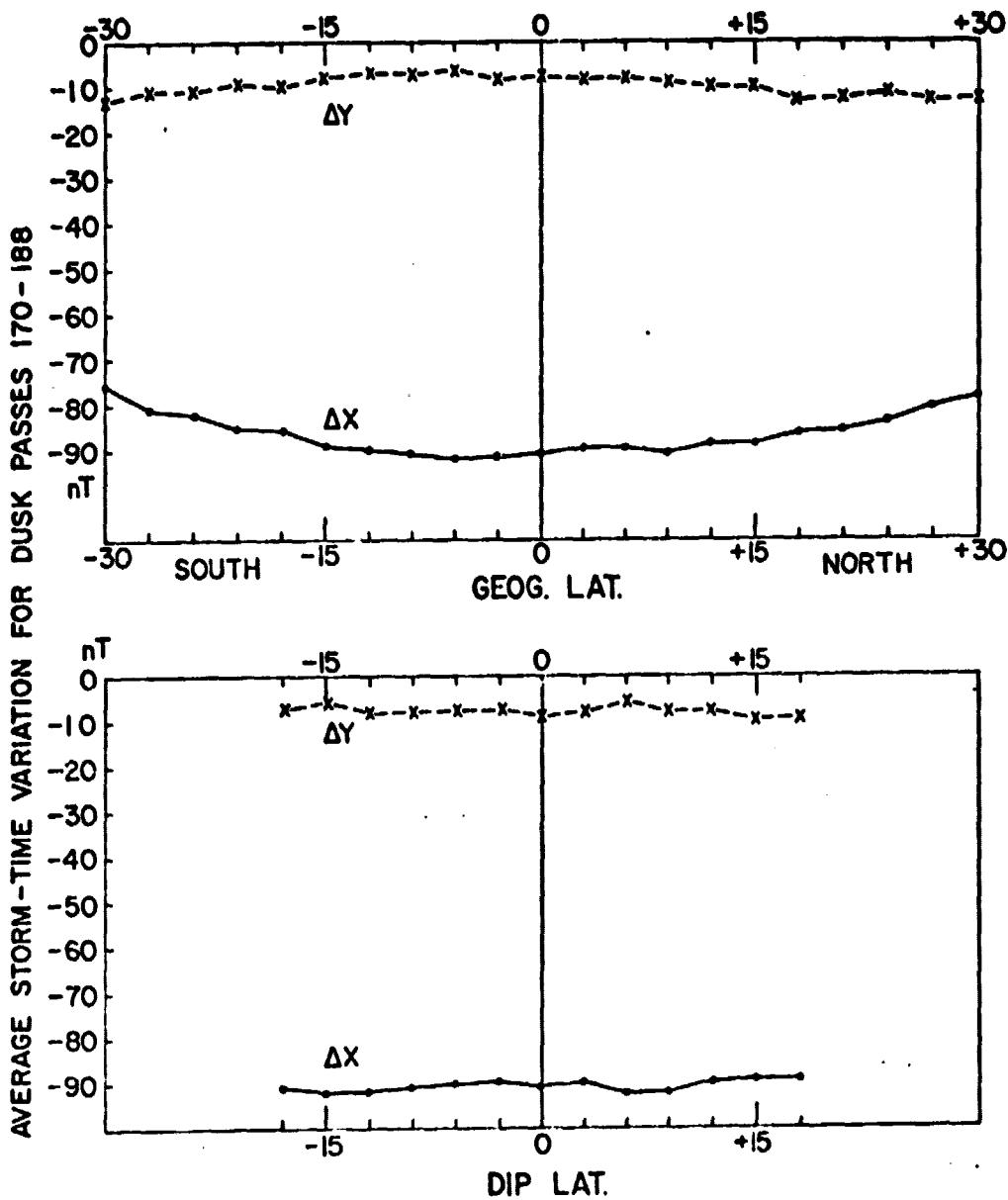


Fig. 14 - Average latitudinal distribution of ΔX and ΔY for the storm-time Dusk passes 170-188 on Nov. 13-14, 1979.
Upper half - For geographical latitudes.
Lower half - For dip latitudes.

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Table 1 - Erroneous values of Delta B as printed in Investigator B Table (pages 1-5, 1-6, 1-7 for passes 138 to 216 for Nov. 11-15, 1979) of the NASA Tech. Memorandum 82160 (Magsat Data Processing: A report for investigators, Langell et al., Nov. 1981).

DUSK (Ascending) Passes			DAWN (Descending) Passes		
Pass No	DELTA B		Pass No	DELTA B	
	As given	Should be about		As given	Should be about
198	+20.9	-69	162	- 35.1	-27
205	-40.2	-53	168	- 21.6	-26
			178	-136.0	-66
			186	-132.0	-82
			204	- 49.1	-38
			205	- 46.3	No data (?)
			209	- 47.2	No data
			211	- 40.4	-36
			215	- 48.9	-16

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Table 2: AH (Dusk), units nT.

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Table 3: ΔH (Dawn), units nT.

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Table 4: ΔH (Dusk + Dawn)/2, units nT.

TRANSMITTER NAME	LAST THREE Pairs												NEXT THREE Pairs												
	+31	+27	+24	+21	+18	+15	+12	+9	+6	+3	0	-3	+31	+27	+24	+21	+18	+15	+12	+9	+6	+3	-3	0	
+100	10	+175	+27	+24	+21	+18	+15	+12	+9	+6	+3	-31	+30	+27	+24	+21	+18	+15	+12	+9	+6	+3	-30	+27	+24
+101	10	+170	+29	+25	+22	+19	+16	+13	+10	+7	+4	-30	+26	+23	+20	+17	+14	+11	+8	+5	+2	-27	+25	+22	+19
+102	10	+165	+25	+22	+19	+16	+13	+10	+7	+4	-29	+24	+21	+18	+15	+12	+9	+6	+3	-26	+23	+20	+17	+14	
+103	10	+160	+21	+18	+15	+12	+9	+6	+3	0	-28	+23	+20	+17	+14	+11	+8	+5	+2	-25	+22	+19	+16	+13	
+104	10	+155	+24	+20	+17	+14	+11	+8	+5	+2	-27	+22	+19	+16	+13	+10	+7	+4	+1	-24	+21	+18	+15	+12	
+105	10	+150	+27	+23	+20	+17	+14	+11	+8	+5	-26	+21	+18	+15	+12	+9	+6	+3	0	-23	+20	+17	+14	+11	
+106	10	+145	+29	+25	+22	+19	+16	+13	+10	+7	-25	+20	+17	+14	+11	+8	+5	+2	-1	-22	+19	+16	+13	+10	
+107	10	+140	+23	+20	+17	+14	+11	+8	+5	+2	-24	+19	+16	+13	+10	+7	+4	+1	-21	+18	+15	+12	+9	+6	
+108	10	+135	+29	+25	+22	+19	+16	+13	+10	+7	-23	+18	+15	+12	+9	+6	+3	0	-20	+17	+14	+11	+8	+5	
+109	10	+130	+25	+22	+19	+16	+13	+10	+7	+4	-22	+17	+14	+11	+8	+5	+2	-1	-19	+16	+13	+10	+7	+4	
+110	10	+125	+29	+25	+22	+19	+16	+13	+10	+7	-21	+16	+13	+10	+7	+4	+1	-18	+15	+12	+9	+6	+3	0	
+111	10	+120	+25	+22	+19	+16	+13	+10	+7	+4	-20	+15	+12	+9	+6	+3	0	-17	+14	+11	+8	+5	+2	-1	
+112	10	+115	+27	+24	+21	+18	+15	+12	+9	+6	-19	+14	+11	+8	+5	+2	-1	-16	+13	+10	+7	+4	+1	-15	
+113	10	+110	+24	+21	+18	+15	+12	+9	+6	+3	-18	+13	+10	+7	+4	+1	-15	-12	+13	+10	+7	+4	+1	-14	
+114	10	+105	+27	+24	+21	+18	+15	+12	+9	+6	-17	+12	+9	+6	+3	0	-14	-11	+12	+9	+6	+3	0	-13	
+115	10	+100	+24	+21	+18	+15	+12	+9	+6	+3	-16	+11	+8	+5	+2	-1	-13	-10	+11	+8	+5	+2	-1	-12	
+116	10	+95	+23	+20	+17	+14	+11	+8	+5	+2	-15	+10	+7	+4	+1	-12	-9	-6	+10	+7	+4	+1	-11	-8	-5
+117	10	+90	+25	+22	+19	+16	+13	+10	+7	+4	-14	+9	+6	+3	0	-11	-8	-5	+9	+6	+3	0	-10	-7	-4
+118	10	+85	+27	+24	+21	+18	+15	+12	+9	+6	-13	+8	+5	+2	-1	-10	-7	-4	+8	+5	+2	-1	-9	-6	-3
+119	10	+80	+25	+22	+19	+16	+13	+10	+7	+4	-12	+7	+4	+1	-9	-6	-3	-10	+7	+4	+1	-8	-5	-2	
+120	10	+75	+25	+22	+19	+16	+13	+10	+7	+4	-11	+6	+3	0	-8	-5	-2	-9	+6	+3	0	-8	-5	-2	
+121	10	+70	+27	+24	+21	+18	+15	+12	+9	+6	-10	+5	+2	-1	-7	-4	-1	-8	+5	+2	-1	-7	-4	-1	
+122	10	+65	+25	+22	+19	+16	+13	+10	+7	+4	-9	+4	+1	-6	-3	-1	-7	-4	+4	+1	-6	-3	-1	-7	-4
+123	10	+60	+25	+22	+19	+16	+13	+10	+7	+4	-8	+3	+1	-5	-2	-1	-6	-3	+3	+1	-5	-2	-1	-6	-3
+124	10	+55	+27	+24	+21	+18	+15	+12	+9	+6	-7	+2	-1	-4	-1	-5	-2	-1	-6	-3	-1	-5	-2	-1	
+125	10	+50	+25	+22	+19	+16	+13	+10	+7	+4	-6	-1	-3	-1	-4	-1	-5	-2	-1	-6	-3	-1	-5	-2	
+126	10	+45	+20	+17	+14	+11	+8	+5	+2	-1	-5	-2	-1	-6	-3	-1	-5	-2	-1	-6	-3	-1	-5	-2	
+127	10	+40	+31	+28	+25	+22	+19	+16	+13	+10	+7	+4	-25	+24	+21	+18	+15	+12	+9	+6	+3	-24	+23	+20	
+128	10	+35	+31	+28	+25	+22	+19	+16	+13	+10	+7	+4	-24	+23	+20	+17	+14	+11	+8	+5	+2	-23	+22	+19	
+129	10	+30	+31	+28	+25	+22	+19	+16	+13	+10	+7	+4	-23	+22	+19	+16	+13	+10	+7	+4	+1	-22	+21	+18	
+130	10	+25	+31	+28	+25	+22	+19	+16	+13	+10	+7	+4	-22	+21	+18	+15	+12	+9	+6	+3	-21	+20	+17	+14	
+131	10	+20	+31	+28	+25	+22	+19	+16	+13	+10	+7	+4	-21	+20	+17	+14	+11	+8	+5	+2	-20	+19	+16	+13	
+132	10	+15	+29	+26	+23	+20	+17	+14	+11	+8	+5	-20	+19	+16	+13	+10	+7	+4	+1	-19	+18	+15	+12	+9	
+133	10	+10	+27	+24	+21	+18	+15	+12	+9	+6	+3	-19	+18	+15	+12	+9	+6	+3	0	-18	+17	+14	+11	+8	
+134	10	+5	+25	+22	+19	+16	+13	+10	+7	+4	-18	+17	+14	+11	+8	+5	+2	-1	-17	+16	+13	+10	+7	+4	
+135	10	0	+25	+22	+19	+16	+13	+10	+7	+4	-17	+16	+13	+10	+7	+4	+1	-16	+15	+12	+9	+6	+3	0	
+136	10	-5	+25	+22	+19	+16	+13	+10	+7	+4	-16	+15	+12	+9	+6	+3	0	-15	+14	+11	+8	+5	+2	-1	
+137	10	-10	+27	+24	+21	+18	+15	+12	+9	+6	-15	+14	+11	+8	+5	+2	-1	-14	+13	+10	+7	+4	+1	-13	
+138	10	-15	+25	+22	+19	+16	+13	+10	+7	+4	-14	+13	+10	+7	+4	+1	-13	-10	+12	+9	+6	+3	-12	+11	
+139	10	-20	+27	+24	+21	+18	+15	+12	+9	+6	-13	+12	+9	+6	+3	0	-12	-9	+11	+8	+5	+2	-11	+10	
+140	10	-25	+25	+22	+19	+16	+13	+10	+7	+4	-12	+11	+8	+5	+2	-1	-11	-8	+10	+7	+4	+1	-10	+9	
+141	10	-30	+27	+24	+21	+18	+15	+12	+9	+6	-11	+10	+7	+4	+1	-10	-7	-4	+9	+6	+3	-9	+8	-1	
+142	10	-35	+21	+18	+15	+12	+9	+6	+3	0	-10	+9	+6	+3	0	-9	-6	-3	+8	+5	+2	-8	+7	-1	
+143	10	-40	+21	+18	+15	+12	+9	+6	+3	0	-9	+8	+5	+2	-1	-8	-5	-2	+7	+4	+1	-7	+6	-1	
+144	10	-45	+22	+19	+16	+13	+10	+7	+4	-1	-8	+7	+4	+1	-7	-4	-1	-8	+6	+3	-6	+5	+2	-6	
+145	10	-50	+26	+23	+20	+17	+14	+11	+8	+5	-7	+6	+3	0	-6	-3	-1	-7	+5	+2	-5	+4	+1	-5	
+146	10	-55	+21	+18	+15	+12	+9	+6	+3	0	-6	+5	+2	-1	-5	-2	-1	-6	+4	+1	-4	+3	+1	-4	
+147	10	-60	+16	+13	+10	+7	+4	+1	-1	-1	-5	+4	+1	-4	-1	-5	-2	-1	-6	+3	+1	-3	+2	+1	-3
+148	10	-65	+20	+17	+14	+11	+8	+5	+2	-1	-4	+3	+1	-3	-1	-4	-1	-5	+3	+1	-3	+2	+1	-3	
+149	10	-70	+21	+18	+15	+12	+9	+6	+3	0	-3	+2	+1	-2	-1	-3	-1	-4	+2	+1	-2	+1	+1	-2	
+150	10	-75	+25	+22	+19	+16	+13	+10	+7	+4	-2	+1	-1	-2	-1	-3	-1	-4	+1	-1	-2	+1	+1	-2	
+151	10	-80	+27	+24	+21	+18	+15	+12	+9	+6	-1	-1	-2	-1	-3	-1	-4	-1	-1	-2	+1	+1	-2	-1	
+152	10	-85	+23	+20	+17	+14	+11	+8	+5	+2	-1	-1	-2	-1	-3	-1	-4	-1	-1	-2	+1	+1	-2	-1	
+153	10	-90	+25	+22	+19	+16	+13	+10	+7	+4	-1	-1	-2	-1	-3	-1	-4	-1	-1	-2	+1	+1	-2	-1	
+154	10	-95	+23	+20	+17	+14	+11	+8	+5	+2	-1	-1	-2	-1	-3	-1	-4	-1	-1	-2	+1	+1	-2	-1	
+155	10	-100	+26	+23	+20	+17	+14	+11	+8	+5	-1	-1	-2	-1	-3	-1	-4	-1	-1	-2	+1	+1	-2	-1	
+156	10	-105	+25	+22	+19	+16	+13	+10	+7	+4	-1	-1	-2	-1	-3	-1	-4	-1	-1	-2	+1	+1	-2	-1	
+157	10	-110	+25	+22	+19	+16	+13	+10	+7	+4	-1	-1	-2	-1	-3	-1	-4	-1	-1	-2	+1	+1	-2	-1	
+158	10	-115	+21	+18	+15	+12	+9	+6	+3	0	-1	-1	-2	-1	-3	-1	-4	-1	-1	-2	+1	+1	-2	-1	
+159	10	-120	+25	+22	+19	+16	+13	+10	+7	+4	-1	-1	-2	-1	-3	-1	-4	-1	-1	-2	+1	+1	-2	-1	
+160	10	-125	+21	+18	+15	+12	+9	+6	+3	0	-1	-1	-2	-1	-3	-1	-4	-1	-1	-2	+1	+1	-2	-1	
+161	10	-130	+25	+22	+19	+16	+13	+10	+7	+4	-1	-1	-2	-1	-3	-1	-4	-1	-1	-2	+1	+1	-2	-1	
+162	10	-135	+25	+22	+19	+16	+13	+10	+7	+4	-1	-1	-2	-1	-3	-1	-4	-1	-1	-2	+1	+1	-2	-1	
+163	10	-140	+21	+18	+15	+12	+9	+6	+3	0	-1	-1	-2	-1	-3	-1	-4	-1	-1	-2	+1	+1	-2	-1	
+164	10	-145	+25	+22	+19	+16	+13	+10	+7	+4	-1	-1	-2	-1	-3	-1	-4	-1	-1	-2	+1	+1	-2	-1	
+165	10	-150	+21	+18	+15	+12	+9	+6	+3	0	-1	-1	-2	-1	-3	-1	-4	-1	-1	-2	+1	+1	-2	-1	
+166	10	-155	+25	+22	+19	+16	+13	+10	+7	+4	-1	-1	-2	-1	-3	-1	-4	-1	-1	-2	+1	+1	-2	-1	
+167	10	-160	+21	+18	+15	+12	+9	+6	+3	0	-1	-1	-2	-1	-3	-1	-4	-1	-1	-2	+1	+1	-2	-1	
+168	10	-165	+25	+22	+19	+16	+13	+10	+7	+4															

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Table 5: ΔH (Dusk - Dawn)/2, units nT.

Table 6: ΔX (Dusk), units nT.

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Table 7: AX (Dawn), units nT.

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Table 8: ΔX (Dusk + Dawn)/2, units nT.

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Table 9: ΔX (Dusk - Dawn)/2, units nT.

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Table 10: ΔY (Dusk), units nT.

LATITUDE RANGE	LATITUDES FROM												DEGREES TO 20 DEGREES											
	-30	-27	-24	-21	-18	-15	-12	-9	-6	-3	0	3	6	9	12	15	18	21	24	27	30			
-180	70	-175	-8	-6	-4	-2	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
-175	70	-170	-9	-7	-5	-3	-2	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
-170	70	-165	-5	-3	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
-165	70	-160	-6	-4	-2	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
-160	70	-155	-2	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
-155	70	-150	-6	-4	-2	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
-150	70	-145	-6	-4	-2	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
-145	70	-140	-3	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
-140	70	-135	-2	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
-135	70	-130	-6	-4	-2	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
-130	70	-125	-6	-4	-2	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
-125	70	-120	-6	-4	-2	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
-120	70	-115	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
-115	70	-110	-7	-5	-3	-2	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
-110	70	-105	3	7	12	16	20	23	27	31	36	41	46	51	56	61	66	71	76	81	86	91	96	101
-105	70	-100	11	12	16	20	23	27	31	36	41	46	51	56	61	66	71	76	81	86	91	96	101	106
-100	70	-95	7	11	16	20	23	27	31	36	41	46	51	56	61	66	71	76	81	86	91	96	101	106
-95	70	-90	6	10	16	20	23	27	31	36	41	46	51	56	61	66	71	76	81	86	91	96	101	106
-90	70	-85	6	9	11	13	16	19	23	27	31	36	41	46	51	56	61	66	71	76	81	86	91	96
-85	70	-80	3	9	11	13	16	19	23	27	31	36	41	46	51	56	61	66	71	76	81	86	91	96
-80	70	-75	10	14	17	19	23	27	31	36	41	46	51	56	61	66	71	76	81	86	91	96	101	106
-75	70	-70	10	12	15	19	23	27	31	36	41	46	51	56	61	66	71	76	81	86	91	96	101	106
-70	70	-65	15	17	22	22	26	29	29	33	37	42	47	52	57	62	67	72	77	82	87	92	97	102
-65	70	-60	10	13	15	17	17	21	23	23	27	31	36	41	46	51	56	61	66	71	76	81	86	91
-60	70	-55	3	7	10	13	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
-55	70	-50	8	7	11	13	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
-50	70	-45	13	15	13	13	13	17	20	19	16	14	12	10	8	6	4	2	0	-2	-4	-6	-8	-10
-45	70	-40	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
-40	70	-35	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
-35	70	-30	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
-30	70	-25	16	17	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
-25	70	-20	12	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
-20	70	-15	22	23	22	21	21	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
-15	70	-10	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
-10	70	-5	19	19	20	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
-5	70	0	11	12	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
0	70	5	16	14	16	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
5	70	10	12	10	11	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7
10	70	15	13	11	12	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	
15	70	20	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
20	70	25	6	12	12	10	7	9	6	14	12	17	6	3	6	3	6	3	6	3	6	3	6	3
25	70	30	16	15	17	17	18	17	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
30	70	35	10	11	12	12	12	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
35	70	40	16	13	12	11	11	9	2	4	7	10	14	17	21	24	27	31	34	37	41	45	49	
40	70	45	12	12	11	11	9	5	6	1	2	4	7	10	14	17	21	24	27	31	34	37	41	45
45	70	50	7	10	11	13	13	13	10	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7
50	70	55	7	10	11	14	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
55	70	60	5	7	6	8	11	14	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
60	70	65	8	6	5	13	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
65	70	70	8	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
70	70	75	12	12	10	9	10	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
75	70	80	9	11	11	11	11	11	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
80	70	85	5	8	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
85	70	90	7	10	10	14	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
90	70	95	2	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
95	70	100	11	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
100	70	105	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
105	70	110	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
110	70	115	-5	-7	-7	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6
115	70	120	0	0	3	6	9	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
120	70	125	-5	-5	-5	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4
125	70	130	-8	-3	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
130	70	135	5	5	0	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
135	70	140	-15	-10	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
140	70	145	-12	-5	-2	-2	-2	-2</td																

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Table 11: ΔY (Dawn), units nT.

INTERPOLATION RANGE	0-10	0-20	0-30	0-40	0-50	0-60	0-70	0-80	0-90	0-100	0-110	0-120	0-130	0-140	0-150	0-160	0-170	0-180	0-190	0-200	0-210	0-220	0-230	0-240	0-250	0-260	0-270	0-280	0-290	0-300	0-310	0-320	0-330	0-340	0-350	0-360	0-370	0-380	0-390	0-400	0-410	0-420	0-430	0-440	0-450	0-460	0-470	0-480	0-490	0-500	0-510	0-520	0-530	0-540	0-550	0-560	0-570	0-580	0-590	0-600	0-610	0-620	0-630	0-640	0-650	0-660	0-670	0-680	0-690	0-700	0-710	0-720	0-730	0-740	0-750	0-760	0-770	0-780	0-790	0-800	0-810	0-820	0-830	0-840	0-850	0-860	0-870	0-880	0-890	0-900	0-910	0-920	0-930	0-940	0-950	0-960	0-970	0-980	0-990	0-1000	0-1010	0-1020	0-1030	0-1040	0-1050	0-1060	0-1070	0-1080	0-1090	0-1100	0-1110	0-1120	0-1130	0-1140	0-1150	0-1160	0-1170	0-1180	0-1190	0-1200	0-1210	0-1220	0-1230	0-1240	0-1250	0-1260	0-1270	0-1280	0-1290	0-1300	0-1310	0-1320	0-1330	0-1340	0-1350	0-1360	0-1370	0-1380	0-1390	0-1400	0-1410	0-1420	0-1430	0-1440	0-1450	0-1460	0-1470	0-1480	0-1490	0-1500	0-1510	0-1520	0-1530	0-1540	0-1550	0-1560	0-1570	0-1580	0-1590	0-1600	0-1610	0-1620	0-1630	0-1640	0-1650	0-1660	0-1670	0-1680	0-1690	0-1700	0-1710	0-1720	0-1730	0-1740	0-1750	0-1760	0-1770	0-1780	0-1790	0-1800	0-1810	0-1820	0-1830	0-1840	0-1850	0-1860	0-1870	0-1880	0-1890	0-1900	0-1910	0-1920	0-1930	0-1940	0-1950	0-1960	0-1970	0-1980	0-1990	0-2000	0-2010	0-2020	0-2030	0-2040	0-2050	0-2060	0-2070	0-2080	0-2090	0-2100	0-2110	0-2120	0-2130	0-2140	0-2150	0-2160	0-2170	0-2180	0-2190	0-2200	0-2210	0-2220	0-2230	0-2240	0-2250	0-2260	0-2270	0-2280	0-2290	0-2300	0-2310	0-2320	0-2330	0-2340	0-2350	0-2360	0-2370	0-2380	0-2390	0-2400	0-2410	0-2420	0-2430	0-2440	0-2450	0-2460	0-2470	0-2480	0-2490	0-2500	0-2510	0-2520	0-2530	0-2540	0-2550	0-2560	0-2570	0-2580	0-2590	0-2600	0-2610	0-2620	0-2630	0-2640	0-2650	0-2660	0-2670	0-2680	0-2690	0-2700	0-2710	0-2720	0-2730	0-2740	0-2750	0-2760	0-2770	0-2780	0-2790	0-2800	0-2810	0-2820	0-2830	0-2840	0-2850	0-2860	0-2870	0-2880	0-2890	0-2900	0-2910	0-2920	0-2930	0-2940	0-2950	0-2960	0-2970	0-2980	0-2990	0-3000	0-3010	0-3020	0-3030	0-3040	0-3050	0-3060	0-3070	0-3080	0-3090	0-3100	0-3110	0-3120	0-3130	0-3140	0-3150	0-3160	0-3170	0-3180	0-3190	0-3200	0-3210	0-3220	0-3230	0-3240	0-3250	0-3260	0-3270	0-3280	0-3290	0-3300	0-3310	0-3320	0-3330	0-3340	0-3350	0-3360	0-3370	0-3380	0-3390	0-3400	0-3410	0-3420	0-3430	0-3440	0-3450	0-3460	0-3470	0-3480	0-3490	0-3500	0-3510	0-3520	0-3530	0-3540	0-3550	0-3560	0-3570	0-3580	0-3590	0-3600	0-3610	0-3620	0-3630	0-3640	0-3650	0-3660	0-3670	0-3680	0-3690	0-3700	0-3710	0-3720	0-3730	0-3740	0-3750	0-3760	0-3770	0-3780	0-3790	0-3800	0-3810	0-3820	0-3830	0-3840	0-3850	0-3860	0-3870	0-3880	0-3890	0-3900	0-3910	0-3920	0-3930	0-3940	0-3950	0-3960	0-3970	0-3980	0-3990	0-4000	0-4010	0-4020	0-4030	0-4040	0-4050	0-4060	0-4070	0-4080	0-4090	0-4100	0-4110	0-4120	0-4130	0-4140	0-4150	0-4160	0-4170	0-4180	0-4190	0-4200	0-4210	0-4220	0-4230	0-4240	0-4250	0-4260	0-4270	0-4280	0-4290	0-4300	0-4310	0-4320	0-4330	0-4340	0-4350	0-4360	0-4370	0-4380	0-4390	0-4400	0-4410	0-4420	0-4430	0-4440	0-4450	0-4460	0-4470	0-4480	0-4490	0-4500	0-4510	0-4520	0-4530	0-4540	0-4550	0-4560	0-4570	0-4580	0-4590	0-4600	0-4610	0-4620	0-4630	0-4640	0-4650	0-4660	0-4670	0-4680	0-4690	0-4700	0-4710	0-4720	0-4730	0-4740	0-4750	0-4760	0-4770	0-4780	0-4790	0-4800	0-4810	0-4820	0-4830	0-4840	0-4850	0-4860	0-4870	0-4880	0-4890	0-4900	0-4910	0-4920	0-4930	0-4940	0-4950	0-4960	0-4970	0-4980	0-4990	0-5000	0-5010	0-5020	0-5030	0-5040	0-5050	0-5060	0-5070	0-5080	0-5090	0-5100	0-5110	0-5120	0-5130	0-5140	0-5150	0-5160	0-5170	0-5180	0-5190	0-5200	0-5210	0-5220	0-5230	0-5240	0-5250	0-5260	0-5270	0-5280	0-5290	0-5300	0-5310	0-5320	0-5330	0-5340	0-5350	0-5360	0-5370	0-5380	0-5390	0-5400	0-5410	0-5420	0-5430	0-5440	0-5450	0-5460	0-5470	0-5480	0-5490	0-5500	0-5510	0-5520	0-5530	0-5540	0-5550	0-5560	0-5570	0-5580	0-5590	0-5600	0-5610	0-5620	0-5630	0-5640	0-5650	0-5660	0-5670	0-5680	0-5690	0-5700	0-5710	0-5720	0-5730	0-5740	0-5750	0-5760	0-5770	0-5780	0-5790	0-5800	0-5810	0-5820	0-5830	0-5840	0-5850	0-5860	0-5870	0-5880	0-5890	0-5900	0-5910	0-5920	0-5930	0-5940	0-5950	0-5960	0-5970	0-5980	0-5990	0-6000	0-6010	0-6020	0-6030	0-6040	0-6050	0-6060	0-6070	0-6080	0-6090	0-6100	0-6110	0-6120	0-6130	0-6140	0-6150	0-6160	0-6170	0-6180	0-6190	0-6200	0-6210	0-6220	0-6230	0-6240	0-6250	0-6260	0-6270	0-6280	0-6290	0-6300	0-6310	0-6320	0-6330	0-6340	0-6350	0-6360	0-6370	0-6380	0-6390	0-6400	0-6410	0-6420	0-6430	0-6440	0-6450	0-6460	0-6470	0-6480	0-6490	0-6500	0-6510	0-6520	0-6530	0-6540	0-6550	0-6560	0-6570	0-6580	0-6590	0-6600	0-6610	0-6620	0-6630	0-6640	0-6650	0-6660	0-6670	0-6680	0-6690	0-6700	0-6710	0-6720	0-6730	0-6740	0-6750	0-6760	0-6770	0-6780	0-6790	0-6800	0-6810	0-6820	0-6830	0-6840	0-6850	0-6860	0-6870	0-6880	0-6890	0-6900	0-6910	0-6920	0-6930	0-6940	0-6950	0-6960	0-6970	0-6980	0-6990	0-7000	0-7010	0-7020	0-7030	0-7040	0-7050	0-7060	0-7070	0-7080	0-7090	0-7100	0-7110	0-7120	0-7130	0-7140	0-7150	0-7160	0-7170	0-7180	0-7190	0-7200	0-7210	0-7220	0-7230	0-7240	0-7250	0-7260	0-7270	0-7280	0-7290	0-7300	0-7310	0-7320	0-7330	0-7340	0-7350	0-7360	0-7370	0-7380	0-7390	0-7400	0-7410	0-7420	0-7430	0-7440	0-7450	0-7460	0-7470	0-7480	0-7490	0-7500	0-7510	0-7520	0-7530	0-7540	0-7550	0-7560	0-7570	0-7580	0-7590	0-7600	0-7610	0-7620	0-7630	0-7640	0-7650	0-7660	0-7670	0-7680	0-7690	0-7700	0-7710	0-7720	0-7730	0-7740	0-7750	0-7760	0-7770	0-7780	0-7790	0-7800	0-7810	0-7820	0-7830	0-7840	0-7850	0-7860	0-7870	0-7880	0-7890	0-7900	0-7910	0-7920	0-7930	0-7940	0-7950	0-7960	0-7970	0-7980	0-7990	0-8000	0-8010	0-8020	0-8030	0-8040	0-8050	0-8060	0-8070	0-8080	0-8090	0-8100	0-8110	0-8120	0-8130	0-8140	0-8150	0-8160	0-8170	0-8180	0-8190	0-8200	0-8210	0-8220	0-8230	0-8240	0-8250	0-8260	0-8270	0-8280	0-8290	0-8300	0-8310	0-8320	0-8330	0-8340	0-8350	0-8360	0-8370	0-8380	0-8390	0-8400	0-8410	0-8420	0-8430	0-8440	0-8450	0-8460</th

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Table 12: ΔY (Dusk + Dawn)/2, units nT.

LINEAR PAGE	030	037	044	051	058	065	072	079	086	093	099	090	097	104	111	118	125	132	139	146	153	160	167	174	181	188	195	202	209	216	223	230	237	244	251	258	265	272	279	286	293	299	306	313	320	327	334	341	348	355	362	369	376	383	390	397	404	411	418	425	432	439	446	453	460	467	474	481	488	495	502	509	516	523	530	537	544	551	558	565	572	579	586	593	599	606	613	620	627	634	641	648	655	662	669	676	683	690	697	704	711	718	725	732	739	746	753	760	767	774	781	788	795	802	809	816	823	830	837	844	851	858	865	872	879	886	893	899	906	913	920	927	934	941	948	955	962	969	976	983	990	997	1004	1011	1018	1025	1032	1039	1046	1053	1060	1067	1074	1081	1088	1095	1102	1109	1116	1123	1130	1137	1144	1151	1158	1165	1172	1179	1186	1193	1200	1207	1214	1221	1228	1235	1242	1249	1256	1263	1270	1277	1284	1291	1298	1305	1312	1319	1326	1333	1340	1347	1354	1361	1368	1375	1382	1389	1396	1403	1410	1417	1424	1431	1438	1445	1452	1459	1466	1473	1480	1487	1494	1501	1508	1515	1522	1529	1536	1543	1550	1557	1564	1571	1578	1585	1592	1599	1606	1613	1620	1627	1634	1641	1648	1655	1662	1669	1676	1683	1690	1697	1704	1711	1718	1725	1732	1739	1746	1753	1760	1767	1774	1781	1788	1795	1802	1809	1816	1823	1830	1837	1844	1851	1858	1865	1872	1879	1886	1893	1900	1907	1914	1921	1928	1935	1942	1949	1956	1963	1970	1977	1984	1991	1998	2005	2012	2019	2026	2033	2040	2047	2054	2061	2068	2075	2082	2089	2096	2103	2110	2117	2124	2131	2138	2145	2152	2159	2166	2173	2180	2187	2194	2201	2208	2215	2222	2229	2236	2243	2250	2257	2264	2271	2278	2285	2292	2299	2306	2313	2320	2327	2334	2341	2348	2355	2362	2369	2376	2383	2390	2397	2404	2411	2418	2425	2432	2439	2446	2453	2460	2467	2474	2481	2488	2495	2502	2509	2516	2523	2530	2537	2544	2551	2558	2565	2572	2579	2586	2593	2599	2606	2613	2620	2627	2634	2641	2648	2655	2662	2669	2676	2683	2690	2697	2704	2711	2718	2725	2732	2739	2746	2753	2760	2767	2774	2781	2788	2795	2802	2809	2816	2823	2830	2837	2844	2851	2858	2865	2872	2879	2886	2893	2900	2907	2914	2921	2928	2935	2942	2949	2956	2963	2970	2977	2984	2991	2998	3005	3012	3019	3026	3033	3040	3047	3054	3061	3068	3075	3082	3089	3096	3103	3110	3117	3124	3131	3138	3145	3152	3159	3166	3173	3180	3187	3194	3201	3208	3215	3222	3229	3236	3243	3250	3257	3264	3271	3278	3285	3292	3299	3306	3313	3320	3327	3334	3341	3348	3355	3362	3369	3376	3383	3390	3397	3404	3411	3418	3425	3432	3439	3446	3453	3460	3467	3474	3481	3488	3495	3502	3509	3516	3523	3530	3537	3544	3551	3558	3565	3572	3579	3586	3593	3599	3606	3613	3620	3627	3634	3641	3648	3655	3662	3669	3676	3683	3690	3697	3704	3711	3718	3725	3732	3739	3746	3753	3760	3767	3774	3781	3788	3795	3802	3809	3816	3823	3830	3837	3844	3851	3858	3865	3872	3879	3886	3893	3900	3907	3914	3921	3928	3935	3942	3949	3956	3963	3970	3977	3984	3991	3998	4005	4012	4019	4026	4033	4040	4047	4054	4061	4068	4075	4082	4089	4096	4103	4110	4117	4124	4131	4138	4145	4152	4159	4166	4173	4180	4187	4194	4201	4208	4215	4222	4229	4236	4243	4250	4257	4264	4271	4278	4285	4292	4299	4306	4313	4320	4327	4334	4341	4348	4355	4362	4369	4376	4383	4390	4397	4404	4411	4418	4425	4432	4439	4446	4453	4460	4467	4474	4481	4488	4495	4502	4509	4516	4523	4530	4537	4544	4551	4558	4565	4572	4579	4586	4593	4599	4606	4613	4620	4627	4634	4641	4648	4655	4662	4669	4676	4683	4690	4697	4704	4711	4718	4725	4732	4739	4746	4753	4760	4767	4774	4781	4788	4795	4802	4809	4816	4823	4830	4837	4844	4851	4858	4865	4872	4879	4886	4893	4900	4907	4914	4921	4928	4935	4942	4949	4956	4963	4970	4977	4984	4991	4998	5005	5012	5019	5026	5033	5040	5047	5054	5061	5068	5075	5082	5089	5096	5103	5110	5117	5124	5131	5138	5145	5152	5159	5166	5173	5180	5187	5194	5201	5208	5215	5222	5229	5236	5243	5250	5257	5264	5271	5278	5285	5292	5299	5306	5313	5320	5327	5334	5341	5348	5355	5362	5369	5376	5383	5390	5397	5404	5411	5418	5425	5432	5439	5446	5453	5460	5467	5474	5481	5488	5495	5502	5509	5516	5523	5530	5537	5544	5551	5558	5565	5572	5579	5586	5593	5599	5606	5613	5620	5627	5634	5641	5648	5655	5662	5669	5676	5683	5690	5697	5704	5711	5718	5725	5732	5739	5746	5753	5760	5767	5774	5781	5788	5795	5802	5809	5816	5823	5830	5837	5844	5851	5858	5865	5872	5879	5886	5893	5900	5907	5914	5921	5928	5935	5942	5949	5956	5963	5970	5977	5984	5991	5998	6005	6012	6019	6026	6033	6040	6047	6054	6061	6068	6075	6082	6089	6096	6103	6110	6117	6124	6131	6138	6145	6152	6159	6166	6173	6180	6187	6194	6201	6208	6215	6222	6229	6236	6243	6250	6257	6264	6271	6278	6285	6292	6299	6306	6313	6320	6327	6334	6341	6348	6355	6362	6369	6376	6383	6390	6397	6404	6411	6418	6425	6432	6439	6446	6453	6460	6467	6474	6481	6488	6495	6502	6509	6516	6523	6530	6537	6544	6551	6558	6565	6572	6579	6586	6593	6599	6606	6613	6620	6627	6634	6641	6648	6655	6662	6669	6676	6683	6690	6697	6704	6711	6718	6725	6732	6739	6746	6753	6760	6767	6774	6781	6788	6795	6802	6809	6816	6823	6830	6837	6844	6851	6858	6865	6872	6879	6886	6893	6900	6907	6914	6921	6928	6935	6942	6949	6956	6963	6970	6977	6984	6991	6998	7005	7012	7019	7026	7033	7040	7047	7054	7061	7068	7075	7082	7089	7096	7103	7110	7117	7124	7131	7138	7145	7152	7159	7166	7173	7180	7187	7194	7201	7208	7215	7222	7229	7236	7243	7250	7257	7264	7271	7278	7285	7292	7299	7306	7313	7320	7327	7334	7341	7348	7355	7362	7369	7376	7383	7390	7397	7404	7411	7418	7425	7432	7439	7446	7453	7460	7467	7474	7481	7488	7495	7502	7509	7516	7523	7530	7537	7544	7551	7558	7565	7572	7579	7586	7593	7599	7606	7613	7620	7627	7634	7641	7648	7655	7662	7669	7676	7683	7690	7697	7704	7711	7718	7725	7732	7739	7746	7753	7760	7767	7774	7781	7788	7795	7802	7809	7816	7823	7830	7837	7844	7851	7858	7865	7872	7879	7886	7893	7900	7907	7914	7921	7928	7935	7942	7949	7956	7963	7970	7977	7984	7991	7998	8005	8012	8019	8026	8033	8040	8047	8054	8061	8068	8075	8082	8089	8096	8103	8110	8117	8124	8131	8138	8145	8152	8159	8166	8173	8180	8187	8194	8201	8208	8215	8222	8229	8236	8243	8250	8257	8264	8271	8278	8285	8292	8299	8306	8313	8320	8327	8334	8341	8348	8355	8362	8369	8376	8383	8390	8397	8404	8411	8418	8425	8432	8439	8446	8453	8460	8467	8474	8481	8488	8495	8502	8509	8516	8523	8530	8537	8544	8551	8558	8565	8572	8579	8586	8593	8599	8606	8613	8620	8627	8634	8641	8648	8655	8662	8669	8676	8683	8690	8697	8704	8711	8718	8725	8732	8739	8746	8753	8760	8767	8774	8781	8788	8795	8802	8809	8816	8823	8830	8837	8844	8851	8858	8865	8872	8879	8886	8893	8900	8907	8914	8921	8928	8935	8942	8949	8956	8963	8970	8977	8984	8991	8998	9005	9012	9019	9026	9033	9040	9047	9054	9061	9068	9075	9082	9089	9096	9103	9110	9117	9124	9131	9138	9145	9152	9159	9166	9173	9180

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OF POOR QUALITY

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Table 13: ΔY (Dusk - Dawn)/2, units nT.

LATITUDE RANGE	0°	27°	54°	81°	108°	135°	162°	189°	216°	243°	270°	297°	324°	351°	378°	405°	432°	459°	486°	513°	540°	567°	594°	621°	648°	675°	702°	729°	756°	783°	810°	837°	864°	891°	918°	945°	972°	100°	127°	154°	181°	208°	235°	262°	289°	316°	343°	370°	397°	424°	451°	478°	505°	532°	559°	586°	613°	640°	667°	694°	721°	748°	775°	802°	829°	856°	883°	910°	937°	964°	991°	1018°	1045°	1072°	1100°	1127°	1154°	1181°	1208°	1235°	1262°	1289°	1316°	1343°	1370°	1407°	1434°	1461°	1488°	1515°	1542°	1569°	1596°	1623°	1650°	1677°	1704°	1731°	1758°	1785°	1812°	1839°	1866°	1893°	1920°	1947°	1974°	2001°	2028°	2055°	2082°	2109°	2136°	2163°	2190°	2217°	2244°	2271°	2308°	2335°	2362°	2389°	2416°	2443°	2470°	2507°	2534°	2561°	2588°	2615°	2642°	2669°	2696°	2723°	2750°	2777°	2804°	2831°	2858°	2885°	2912°	2939°	2966°	2993°	3020°	3047°	3074°	3101°	3128°	3155°	3182°	3209°	3236°	3263°	3290°	3317°	3344°	3371°	3408°	3435°	3462°	3489°	3516°	3543°	3570°	3607°	3634°	3661°	3688°	3715°	3742°	3769°	3806°	3833°	3860°	3887°	3914°	3941°	3968°	3995°	4022°	4049°	4076°	4103°	4130°	4157°	4184°	4211°	4238°	4265°	4292°	4319°	4346°	4373°	4400°	4427°	4454°	4481°	4508°	4535°	4562°	4589°	4616°	4643°	4670°	4697°	4724°	4751°	4778°	4805°	4832°	4859°	4886°	4913°	4940°	4967°	4994°	5021°	5048°	5075°	5102°	5129°	5156°	5183°	5210°	5237°	5264°	5291°	5318°	5345°	5372°	5400°	5427°	5454°	5481°	5508°	5535°	5562°	5589°	5616°	5643°	5670°	5697°	5724°	5751°	5778°	5805°	5832°	5859°	5886°	5913°	5940°	5967°	5994°	6021°	6048°	6075°	6102°	6129°	6156°	6183°	6210°	6237°	6264°	6291°	6318°	6345°	6372°	6400°	6427°	6454°	6481°	6508°	6535°	6562°	6589°	6616°	6643°	6670°	6697°	6724°	6751°	6778°	6805°	6832°	6859°	6886°	6913°	6940°	6967°	6994°	7021°	7048°	7075°	7102°	7129°	7156°	7183°	7210°	7237°	7264°	7291°	7318°	7345°	7372°	7400°	7427°	7454°	7481°	7508°	7535°	7562°	7589°	7616°	7643°	7670°	7697°	7724°	7751°	7778°	7805°	7832°	7859°	7886°	7913°	7940°	7967°	7994°	8021°	8048°	8075°	8102°	8129°	8156°	8183°	8210°	8237°	8264°	8291°	8318°	8345°	8372°	8400°	8427°	8454°	8481°	8508°	8535°	8562°	8589°	8616°	8643°	8670°	8697°	8724°	8751°	8778°	8805°	8832°	8859°	8886°	8913°	8940°	8967°	8994°	9021°	9048°	9075°	9102°	9129°	9156°	9183°	9210°	9237°	9264°	9291°	9318°	9345°	9372°	9400°	9427°	9454°	9481°	9508°	9535°	9562°	9589°	9616°	9643°	9670°	9697°	9724°	9751°	9778°	9805°	9832°	9859°	9886°	9913°	9940°	9967°	9994°	10021°	10048°	10075°	10102°	10129°	10156°	10183°	10210°	10237°	10264°	10291°	10318°	10345°	10372°	10400°	10427°	10454°	10481°	10508°	10535°	10562°	10589°	10616°	10643°	10670°	10697°	10724°	10751°	10778°	10805°	10832°	10859°	10886°	10913°	10940°	10967°	10994°	11021°	11048°	11075°	11102°	11129°	11156°	11183°	11210°	11237°	11264°	11291°	11318°	11345°	11372°	11400°	11427°	11454°	11481°	11508°	11535°	11562°	11589°	11616°	11643°	11670°	11697°	11724°	11751°	11778°	11805°	11832°	11859°	11886°	11913°	11940°	11967°	11994°	12021°	12048°	12075°	12102°	12129°	12156°	12183°	12210°	12237°	12264°	12291°	12318°	12345°	12372°	12400°	12427°	12454°	12481°	12508°	12535°	12562°	12589°	12616°	12643°	12670°	12697°	12724°	12751°	12778°	12805°	12832°	12859°	12886°	12913°	12940°	12967°	12994°	13021°	13048°	13075°	13102°	13129°	13156°	13183°	13210°	13237°	13264°	13291°	13318°	13345°	13372°	13400°	13427°	13454°	13481°	13508°	13535°	13562°	13589°	13616°	13643°	13670°	13697°	13724°	13751°	13778°	13805°	13832°	13859°	13886°	13913°	13940°	13967°	13994°	14021°	14048°	14075°	14102°	14129°	14156°	14183°	14210°	14237°	14264°	14291°	14318°	14345°	14372°	14400°	14427°	14454°	14481°	14508°	14535°	14562°	14589°	14616°	14643°	14670°	14697°	14724°	14751°	14778°	14805°	14832°	14859°	14886°	14913°	14940°	14967°	14994°	15021°	15048°	15075°	15102°	15129°	15156°	15183°	15210°	15237°	15264°	15291°	15318°	15345°	15372°	15400°	15427°	15454°	15481°	15508°	15535°	15562°	15589°	15616°	15643°	15670°	15697°	15724°	15751°	15778°	15805°	15832°	15859°	15886°	15913°	15940°	15967°	15994°	16021°	16048°	16075°	16102°	16129°	16156°	16183°	16210°	16237°	16264°	16291°	16318°	16345°	16372°	16400°	16427°	16454°	16481°	16508°	16535°	16562°	16589°	16616°	16643°	16670°	16697°	16724°	16751°	16778°	16805°	16832°	16859°	16886°	16913°	16940°	16967°	16994°	17021°	17048°	17075°	17102°	17129°	17156°	17183°	17210°	17237°	17264°	17291°	17318°	17345°	17372°	17400°	17427°	17454°	17481°	17508°	17535°	17562°	17589°	17616°	17643°	17670°	17697°	17724°	17751°	17778°	17805°	17832°	17859°	17886°	17913°	17940°	17967°	17994°	18021°	18048°	18075°	18102°	18129°	18156°	18183°	18210°	18237°	18264°	18291°	18318°	18345°	18372°	18400°	18427°	18454°	18481°	18508°	18535°	18562°	18589°	18616°	18643°	18670°	18697°	18724°	18751°	18778°	18805°	18832°	18859°	18886°	18913°	18940°	18967°	18994°	19021°	19048°	19075°	19102°	19129°	19156°	19183°	19210°	19237°	19264°	19291°	19318°	19345°	19372°	19400°	19427°	19454°	19481°	19508°	19535°	19562°	19589°	19616°	19643°	19670°	19697°	19724°	19751°	19778°	19805°	19832°	19859°	19886°	19913°	19940°	19967°	19994°	20021°	20048°	20075°	20102°	20129°	20156°	20183°	20210°	20237°	20264°	20291°	20318°	20345°	20372°	20400°	20427°	20454°	20481°	20508°	20535°	20562°	20589°	20616°	20643°	20670°	20697°	20724°	20751°	20778°	20805°	20832°	20859°	20886°	20913°	20940°	20967°	20994°	21021°	21048°	21075°	21102°	21129°	21156°	21183°	21210°	21237°	21264°	21291°	21318°	21345°	21372°	21400°	21427°	21454°	21481°	21508°	21535°	21562°	21589°	21616°	21643°	21670°	21697°	21724°	21751°	21778°	21805°	21832°	21859°	21886°	21913°	21940°	21967°	21994°	22021°	22048°	22075°	22102°	22129°	22156°	22183°	22210°	22237°	22264°	22291°	22318°	22345°	22372°	22400°	22427°	22454°	22481°	22508°	22535°	22562°	22589°	22616°	22643°	22670°	22697°	22724°	22751°	22778°	22805°	22832°	22859°	22886°	22913°	22940°	22967°	22994°	23021°	23048°	23075°	23102°	23129°	23156°	23183°	23210°	23237°	23264°	23291°	23318°	23345°	23372°	23400°	23427°	23454°	23481°	23508°	23535°	23562°	23589°	23616°	23643°	23670°	23697°	23724°	23751°	23778°	23805°	23832°	23859°	23886°	23913°	23940°	23967°	23994°	24021°	24048°	24075°	24102°	24129°	24156°	24183°	24210°	24237°	24264°	24291°	24318°	24345°	24372°	24400°	24427°	24454°	24481°	24508°	24535°	24562°	24589°	24616°	24643°	24670°	24697°	24724°	24751°	24778°	24805°	24832°	24859°	24886°	24913°	24940°	24967°	24994°	25021°	25048°	25075°	25102°	25129°	25156°	25183°	25210°	25237°	25264°	25291°	25318°	25345°	25372°	25400°	25427°	25454°	25481°	25508°	25535°	25562°	25589°	25616°	25643°	25670°	25697°	25724°	25751°	25778°	25805°	25832°	25859°	25886°	25913°	25940°	25967°	25994°	26021°	26048°	26075°	26102°	26129°	26156°	26183°	26210°	26237°	26264°	26291°	26318°	26345°	26372°	26400°	26427°	26454°	26481°	26508°	26535°	26562°	26589°	26616°	26643°	26670°	26697°	26724°	26751°	26778°	26805°	26832°	26859°	26886°	26913°	26940°	26967°	26994°	27021°	27048°	27075°	27102°	27129°	27156°	27183°	27210°	27237°	27264°	27291°	27318°	27345°	27372°	27400°	27427°	27454°	27481°	27508°	27535°	27562°	27589°	27616°	27643°	27670°	27697°	27724°	27751°	27778°	27805°	27832°	27859°	27886°	27913°	27940°	27967°	27994°	28021°	28048°	28075°	28102°	28129°	28156°	28183°	28210°	28237°	28264°	28291°	28318°	28345°	28372°	28400°	28427°	28454°	28481°	28508°	28535°	28562°	28589°	28616°	28643°	28670°	28697°	28724°	28751°	28778°	28805°	28832°	28859°	28886°	28913°	28940°	2896

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Table 14: ΔZ (Dusk), units nT.

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Table 15: ΔZ (Dawn), units nT.

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Table 16: ΔZ (Dusk + Dawn)/2, units nT.

FAMILIENSTUFT FAMILIE	-01	-02	-03	-04	-05	-06	-07	-08	-09	-010	-011	-012	-013	-014	-015	-016	-017</
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Table 17: ΔZ (Dusk - Dawn)/2, units nT.