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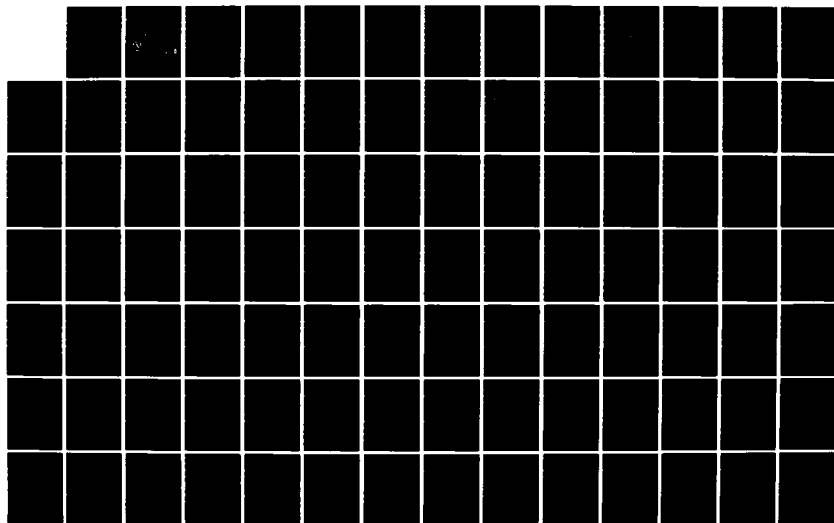
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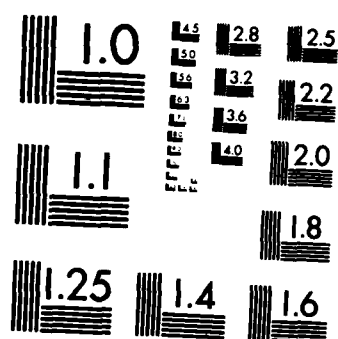
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ATLAS OF MEAN SEA LEVEL PRESSURE

By

Major Henry A. Chary

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1. Introduction

The US Air Force Environmental Technical Applications Center (USAFETAC) prepared this global atlas of mean sea-level pressure and its standard deviation for Headquarters, Strategic Air Command (SAC) under USAFETAC Project 2242. It represents a first for USAFETAC and indeed for Air Weather Service (AWS) in that it is the initial application of a new computer-graphics capability.

The maps are based on the UAPIP data set which is derived from the summarized Air Force Global Weather Central (AFGWC) upper-air analyses. Although primarily an upper-air data set, the UAPIP was used because it was the only gridded data set available at the time offering mean sea-level pressure data over the entire globe.

The plotting software used to produce the maps is a modified version of the OSUCON package developed at Oklahoma State University. It is discussed below.

In this atlas, the global patterns of mean sea-level pressure and the standard deviation of the pressure are presented by month and hemispheric quadrant. Each pressure chart and its corresponding standard deviation chart are found on facing pages.

2. The UAPIP Data Set

The UAPIP is a gridded global data set containing pressure, D-value, temperature, dew point, wind, and density information. It is derived from the Summarized Analysis Data Set (SADS) which is built from the AFGWC upper-air analyses. For each hemisphere (North and South) the UAPIP is presented on a square 65x65 point grid (see Figures 1 and 2).

Let us take a quick look at the development of the UAPIP data set. We will briefly trace the processes starting with an observation arriving at AFGWC and ending with the climatological data formatted into the UAPIP. For greater detail the reader is referred to the references in Section 5.

The analysis and forecast models at AFGWC use gridded data. Three grids are used, the Northern Hemisphere (NH) octagon, the Southern Hemisphere (SH) octagon, and the tropical strip or grid (see Hoke, et al., 1981). There are approximately 5000 reporting stations in the NH octagon, 250 in the SH octagon, and 1150 in the tropical grid. The quantity and quality of the data from these roughly 6400 meteorological reporting stations world-wide varies with geographical area and reporting time.

Radiosonde observations (raobs), pilot-balloon observations (pibals), aircraft observations, surface observations, satellite derived data, and bogus data (see Tarbell and Hoke, 1979) are used in the upper-air analyses. The number of inputs may vary, but there are usually 700 raobs, 1100 pibals, 700 aircraft observations, and 5000 surface observations. Satellite derived data consist of approximately 200 soundings and several hundred cloud track wind observations. The winds are generally based on the movement of low clouds, such as cumulus, and high-level clouds, such as cirrus. Bogus data are input by the AFGWC Forecasting Services Division forecasters when they determine that the first guess field is not satisfactory in data sparse regions. The amount of bogus data input may vary from none to over 100 data points.

AFGWC uses the Hough Global Spectral Analysis Model (HUFANL, see Tarbell and Hoke, 1979) to convert station-specific data to gridded data. This model resolves the global atmosphere with sines and cosines in longitude, Hough functions in latitude, and empirically derived orthogonal functions in the vertical. This technique uses meteorological type (barotropic) waves to resolve the atmosphere. The smallest resolvable atmospheric wave is 15° in longitude. One might also note that the HUFANL does not really analyze for surface pressure and surface temperature. The surface, or mean sea level, values are actually derived from the values computed for the 1000 mb surface. For terrain above 1000 mb, the 1000-mb D-values, or heights, are calculated using the hypsometric equation.

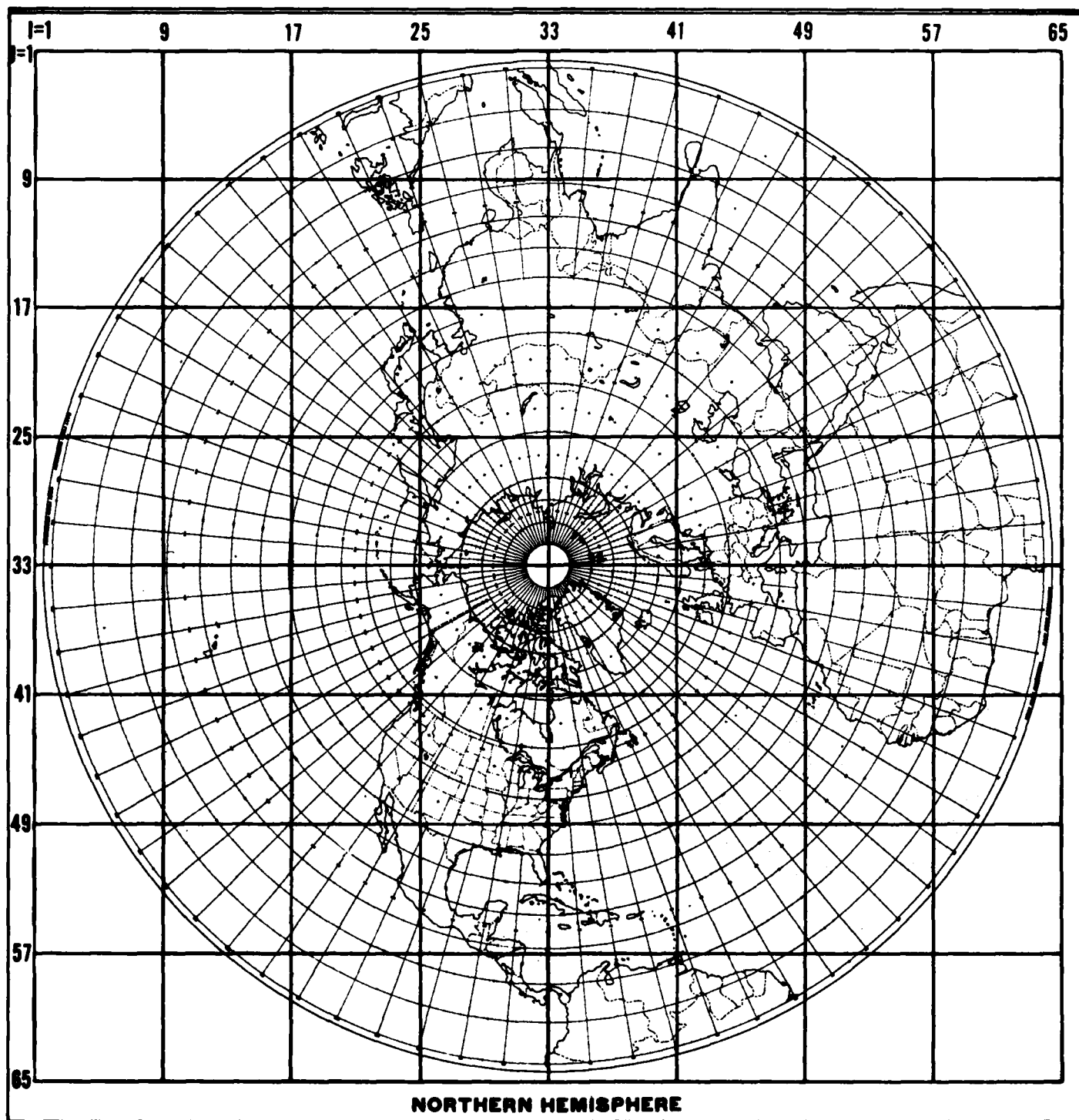


Figure 1. Northern Hemisphere 65x65 Grid.

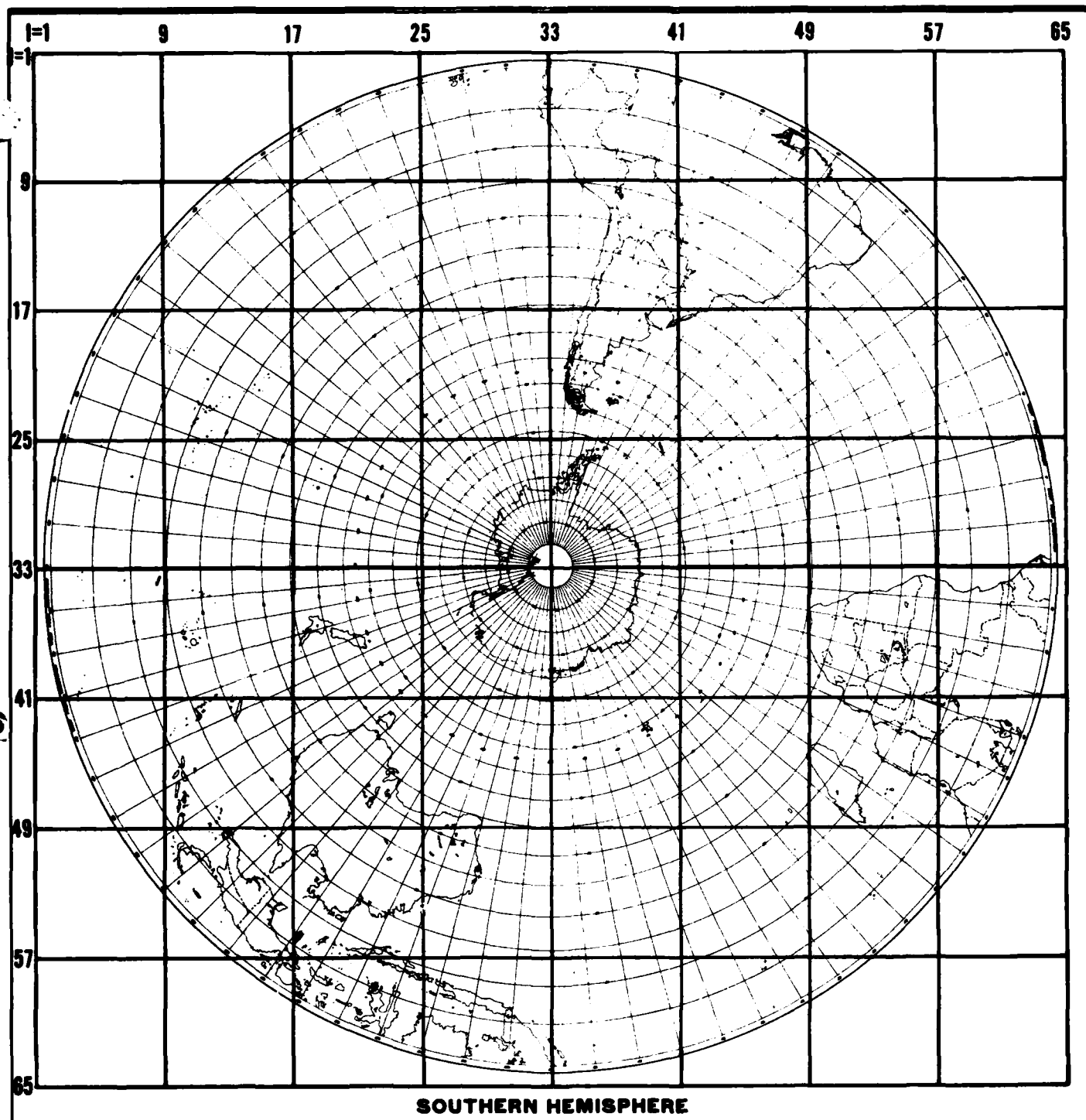


Figure 2. Southern Hemisphere 65x65 Grid.

Once the AFGWC coarse-mesh upper-air analyses are complete, they are sent to OL-A, USAFETAC, Asheville, North Carolina, for inclusion in the Air Weather Service Climatological Data Base. OL-A then uses these analyses to build the SADS.

First, each meteorological element is summarized for each of the 16 standard radiosonde levels by year, month, and hour (00Z and 12Z) for each of the three analyses (NH octagon, SH octagon, and tropical strip). Table 1 shows which elements and which statistics are gathered at each level. Note here, and while looking at Table 1, that the SADS provides both 00Z and 12Z data. The UAPIP derived from the SADS is an "all-hours" climatology.

The next step in the development of the SADS is to prepare two whole-hemisphere grids using data from the NH octagon, SH octagon, and tropical strip. This gives a summarized data set for each hemisphere. In combining each octagon with the tropical strip to obtain the hemispheric data set, the summarized tropical strip data on a 19x72 Mercator grid are translated to the polar stereographic projection. This gives an extension of the octagon grid to a whole-hemispheric grid extending just beyond the equator. The values for each tropical-region grid point from the Equator to 40.97° on the polar stereographic projection are obtained by bilinear interpolation between the four surrounding grid points on the mercator projection. The parameter values for the octagon grid points poleward of 40.97° are combined with those derived for grid points from the tropical strip to form a hemispheric polar stereographic 65x65 grid. The 65x65 grid for each hemisphere thus provides complete hemispheric coverage by virtue of its extension beyond the Equator. This data set in the SADS format is maintained by year-month-hour and is the OL-A, USAFETAC summarized upper-air analysis data set.

The UAPIP is one of the climatological summaries derived from the SADS. The UAPIP climatology contains summarized means and standard deviations of sea-level pressure, D-value, temperature, dew-point depression, and the u and v wind components. Means and standard deviations are calculated according to

$$\text{Mean} = \bar{x} = \Sigma x/n \quad (1)$$

$$\text{Standard Deviation} = \sigma_x = \{[n\Sigma x^2 - (\Sigma x)^2]/n(n-1)\}^{1/2} \quad (2)$$

where x is the element being summarized and n is the number of elements (number of observations) summed.

It is important to note here that the means and standard deviations in the UAPIP, and hence the means and standard deviations plotted in the atlas, are calculated from all available data. This contrasts with some other currently available atlases which show the average of several monthly means as the mean for that month (e.g., taking the average of the mean temperature in January 1960, 1961, ..., and 1969, and calling that number the mean temperature for January). Whereas the mean of means may approximate the true mean, a far more heinous transgression is to calculate a standard deviation based on only, say, ten mean values, and then call that the standard deviation of the population when in fact it is simply the standard deviation of the monthly means. Any relation between the two will be purely coincidental.

3. The OSUCON Plotting Routine

To plot the maps of mean sea level pressure and its standard deviation, we used the OSUCON software package. This is a general purpose system for generating plotted maps and charts. At USAFETAC, the OSUCON package runs on the IBM 4341 Computer. A plot transfer tape is produced which is then input to the DEC PDP 11/45 computer where finished maps are produced by a VERSATEC 2160A raster plotter.

Table 1. Summarized Analysis Data Set (SADS).

<u>Element*</u>	<u>Statistics*</u>	<u>Pressure Level (millibars)</u>
Pressure - P (mb)	ΣP , ΣP^2 , N	SFC (Sea level)
D-Value - h (m)	Σh , Σh^2 , N	1000, 850, 700, 500, 400, 300, 250, 200, 150, 100, 70, 50, 30, 20, 10
Temperature - T (K)	ΣT , ΣT^2 , N	1000, 850, 700, 500, 400, 300, 250, 200, 150, 100, 70, 50, 30, 20, 10
Dew-Point Depression - T_d (K)	ΣT_d , ΣT_d^2 , N	SFC, 850, 700, 500, 400, 300
Zonal Wind Component - U (m sec ⁻¹)	ΣU , ΣU^2 , N	1000, 850, 700, 500, 400, 300, 250, 200, 150, 100, 70, 50, 30, 20, 10
Meridional Wind Component - V (m sec ⁻¹)	ΣV , ΣV^2 , N	1000, 850, 700, 500, 400, 300, 250, 200, 150, 100, 70, 50, 30, 20, 10
Cross Product of Wind Component - UV (m sec ⁻¹)	ΣUV	1000, 850, 700, 500, 400, 300, 250, 200, 150, 100, 70, 50, 30, 20, 10
Density - ρ (g m ⁻³)	$\Sigma \rho$, $\Sigma \rho^2$, N	1000, 850, 700, 500, 400, 300, 250, 200, 150, 100, 70, 50, 30, 20, 10

*Elements and associated statistics are maintained for each coordinate grid point for each period of record year-month-hour for hours 00Z and 12Z. Parameter N is the number of occurrences (by element) which are summarized. The I-J grid spacing is approximately 200 nautical miles at 60°N and 60°S.

* * * * *

When preparing the maps for this atlas, we specified the data to be plotted, the contour interval to be used, and the area of and the orientation of the map. The UAPIP data were read from disk and the maps produced in a straight-forward manner.

A quick look through some of the maps shows some of the peculiarities and idiosyncrasies of OSUCON. In particular, note the tropical regions. Meteorologically speaking here we find rather flat fields. That is to say the pressure gradients are small and pressure change (hence standard deviation) is similarly small. Because of the flatness of the fields to be contoured, single grid-point values can generate high and low pressure centers and centers of maximum and minimum standard deviation that are not really meaningful.

Another quirk is the occasional appearance of "single-line" ridges and troughs and of right-angle kinks in the contours. These arise when the contouring software on the computer attempts to analyze very flat fields and fields where little data is available as explained below.

Flat fields give rise to isolated line segments. What happens is that a few data points are high (or low) enough to warrant a closed contour. The computer calculates and the plotter draws an isopleth around an extremely narrow area. As a result, what is really a closed contour appears as an isolated line segment.

Sparse data (especially near the Equator since the gridded data extend only to the equator and do not cover the entire 65 x 65 grid) gives rise to sharp-angled bends and kinks on the maps. In this case there is simply insufficient data for the computer to generate a smooth contour.

4. Map Use and Comments

The maps in this atlas show mean sea-level pressure for each month and the standard deviation of the mean sea-level pressure by month. These maps are based on a 6-year period of record (1973-1978).

The maps show an averaged pressure pattern. Rarely if ever will a particular day's surface chart look like the applicable monthly mean chart. Areas of mean high pressure depict regions that are either dominated by high pressure cells most of the time or experience extremely high pressure values when transient systems pass. Similar arguments apply to areas of low mean monthly pressure.

Regions with relatively high standard deviations are regions where the normal range of pressure values is large. These areas are dynamically active, experiencing the somewhat frequent passage of highs and lows. Regions of relatively low standard deviation reflect the rather stable, constant weather regimes in those areas.

The prime usefulness of these maps is to assess mean sea-level pressure patterns and pressure values over areas and to estimate pressure values and ranges of pressure values at locations where a point summary such as a Revised Uniform Summary of Surface Weather Observations (RUSSWO) is not available.

When using the maps of this atlas certain cautions must be exercised. First, keep in mind the short (especially for climatological studies) period of record used. Next, realize the different amounts and varying quality of the data that went into the Summarized Analysis Data Set (SADS). Finally, do not try to say more than the data allow.

Note that on the maps north latitude (Northern Hemisphere) is positive and southern latitude (Southern Hemisphere) is negative. For example, 40°N is 40 00 on the maps and 40°S is -40 00.

Also note that east longitude is positive and west longitude is negative. For example, 50°W is -50 00 and 50°E is 50 00.

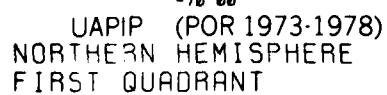
5. References

- Feddes, R.G., 1974: "Development of a Gridded Data Base," USAFETAC TN 74-2, USAFETAC, Air Weather Service (MAC), Scott AFB IL, 83p.
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APPENDIX A

NORTHERN HEMISPHERE MAPS

80 00	70 00	60 00	50 00	40 00	30 00	20 00	10 00	0 00
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A-2

FIGURE A-2

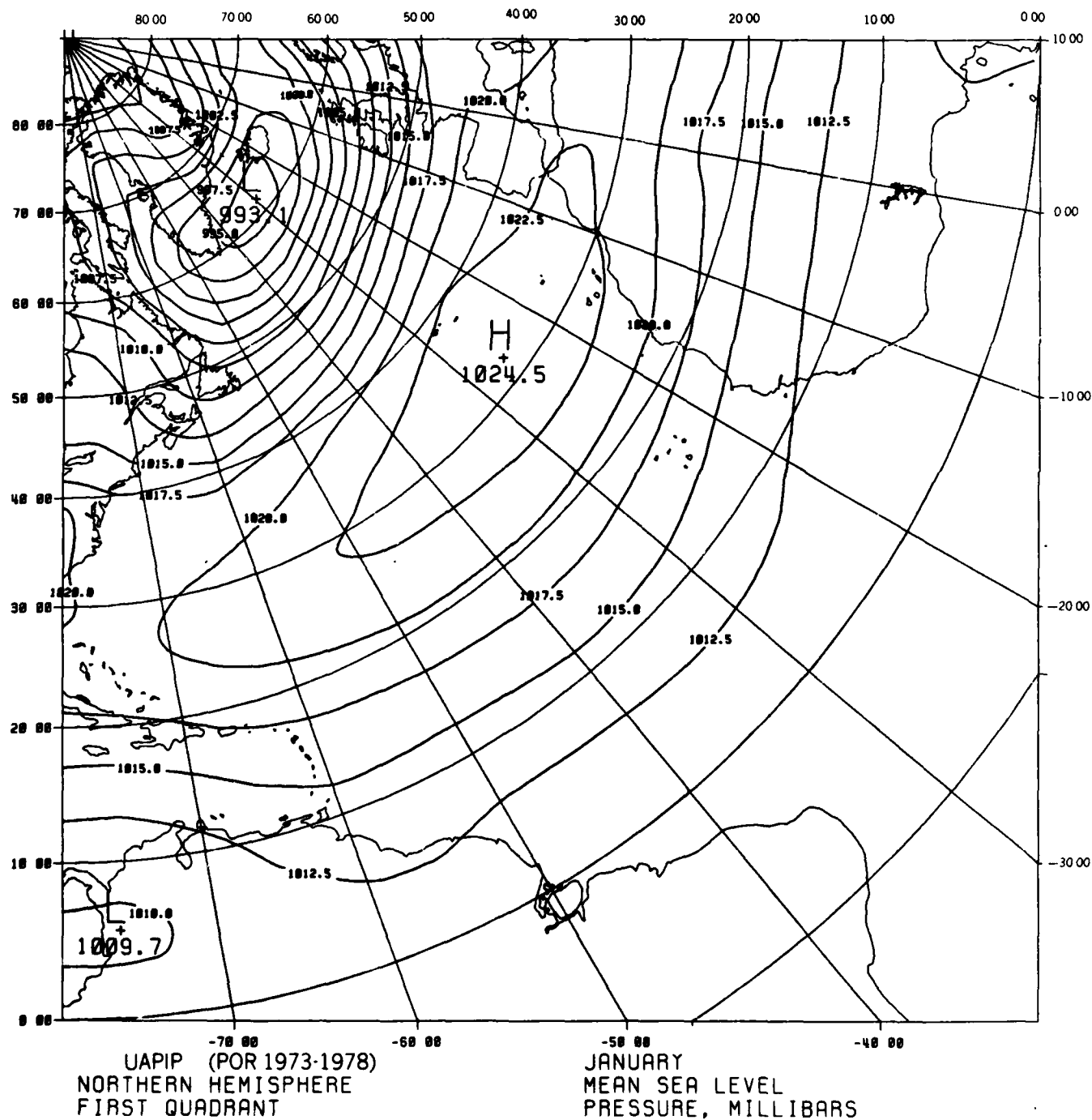
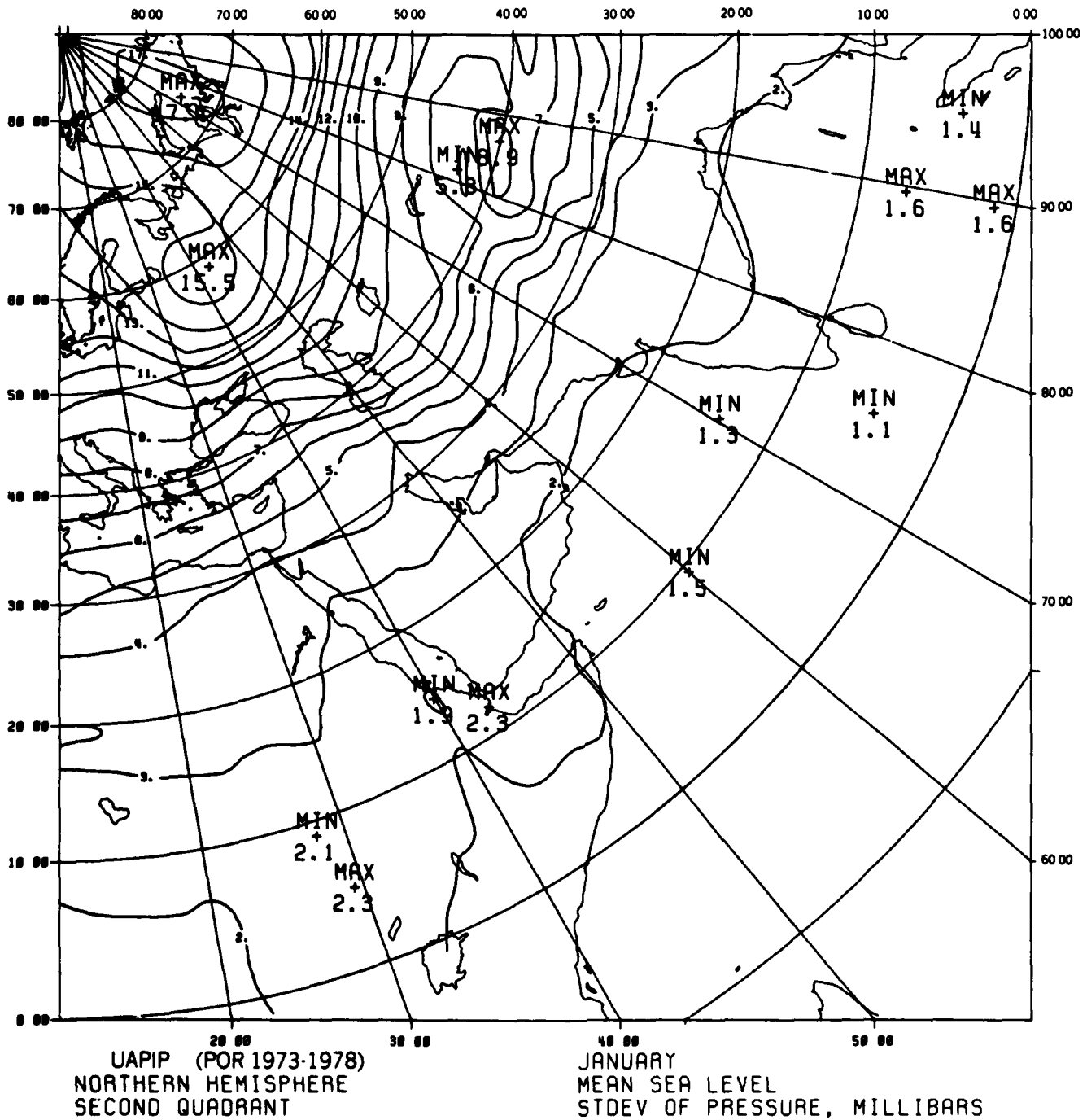


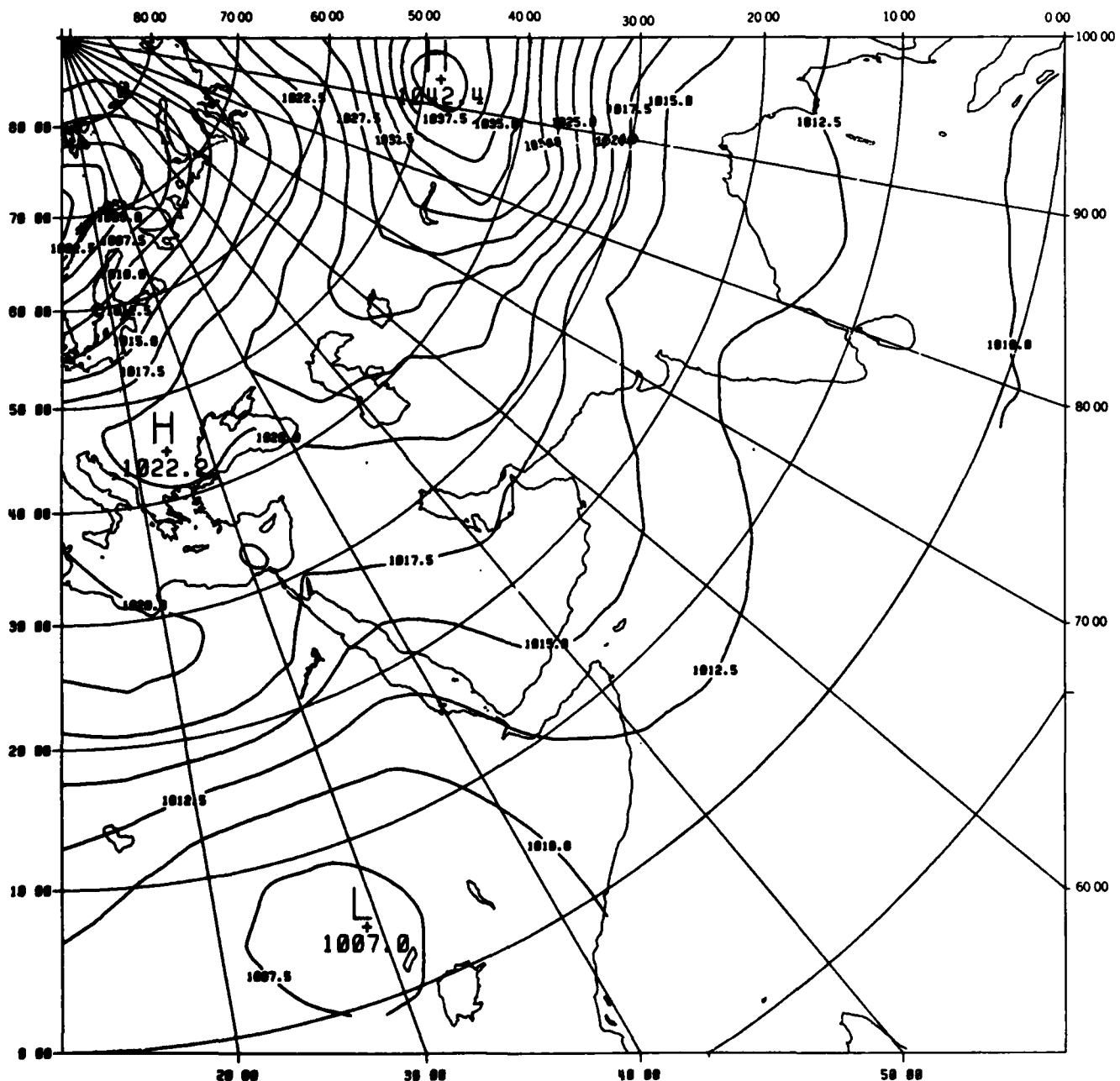
FIGURE A-3



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
SECOND QUADRANT

JANUARY
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

FIGURE A-4



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
SECOND QUADRANT

JANUARY
MEAN SEA LEVEL
PRESSURE, MILLIBARS

FIGURE A-5

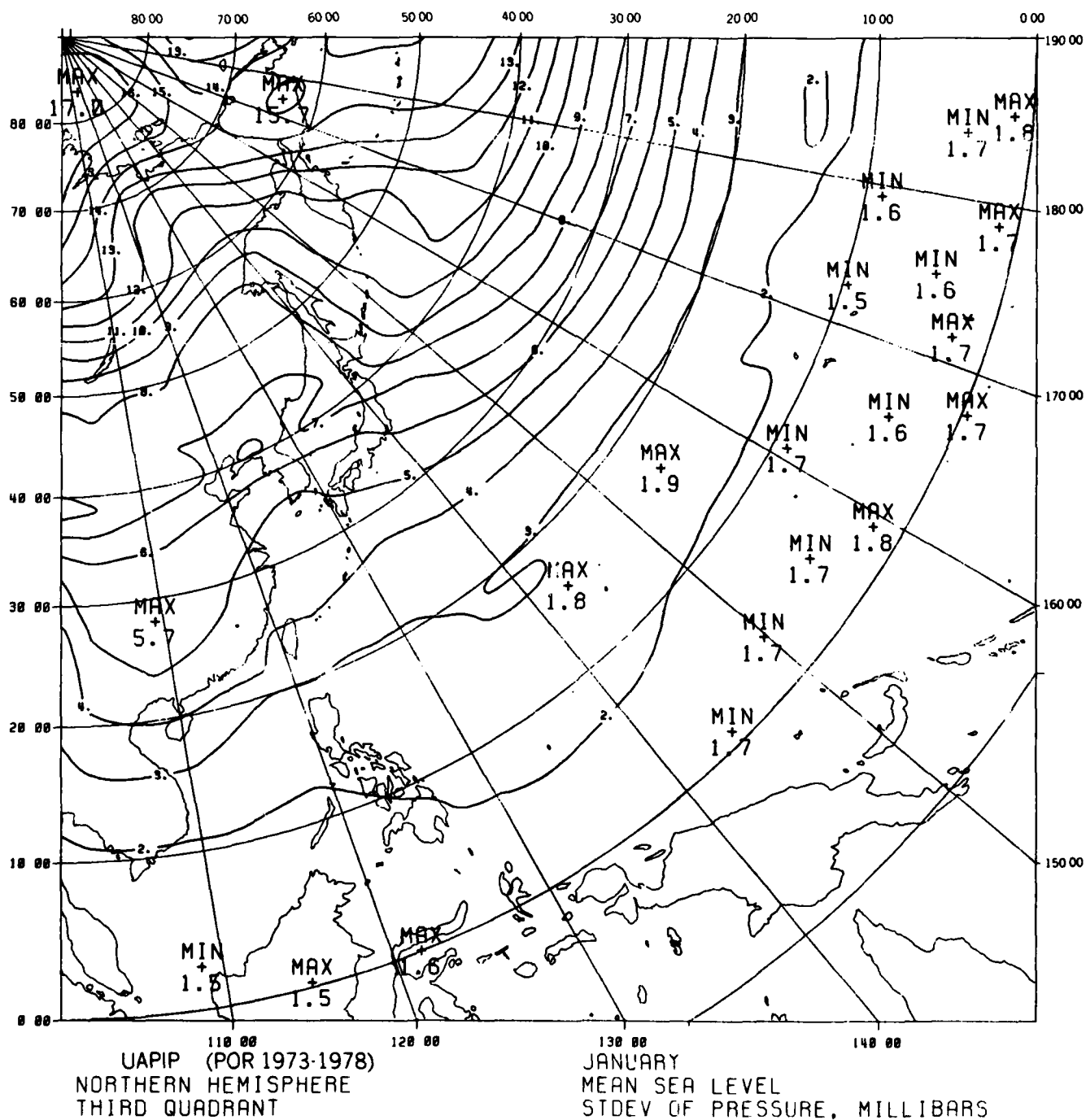


FIGURE A-6

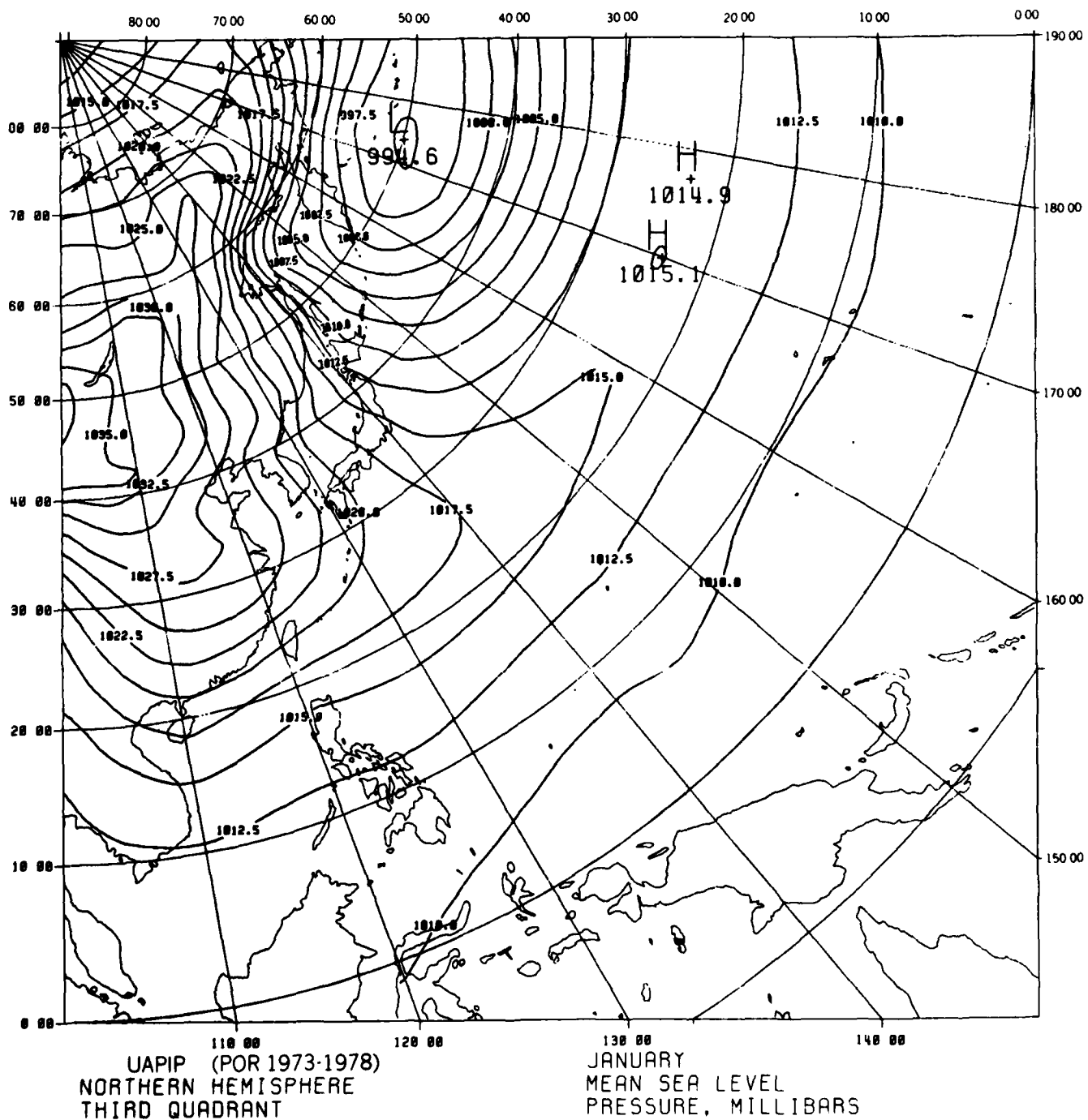
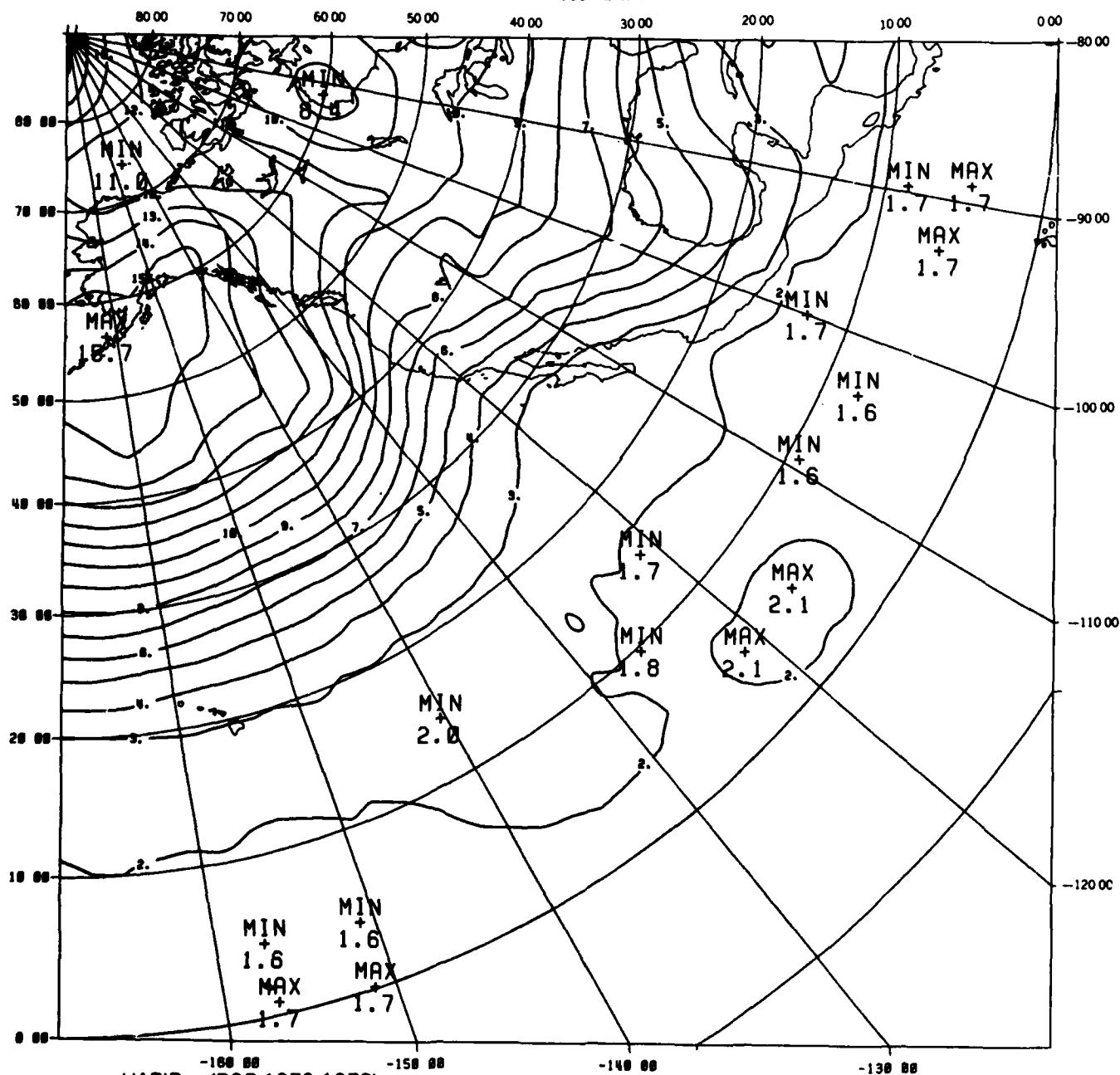


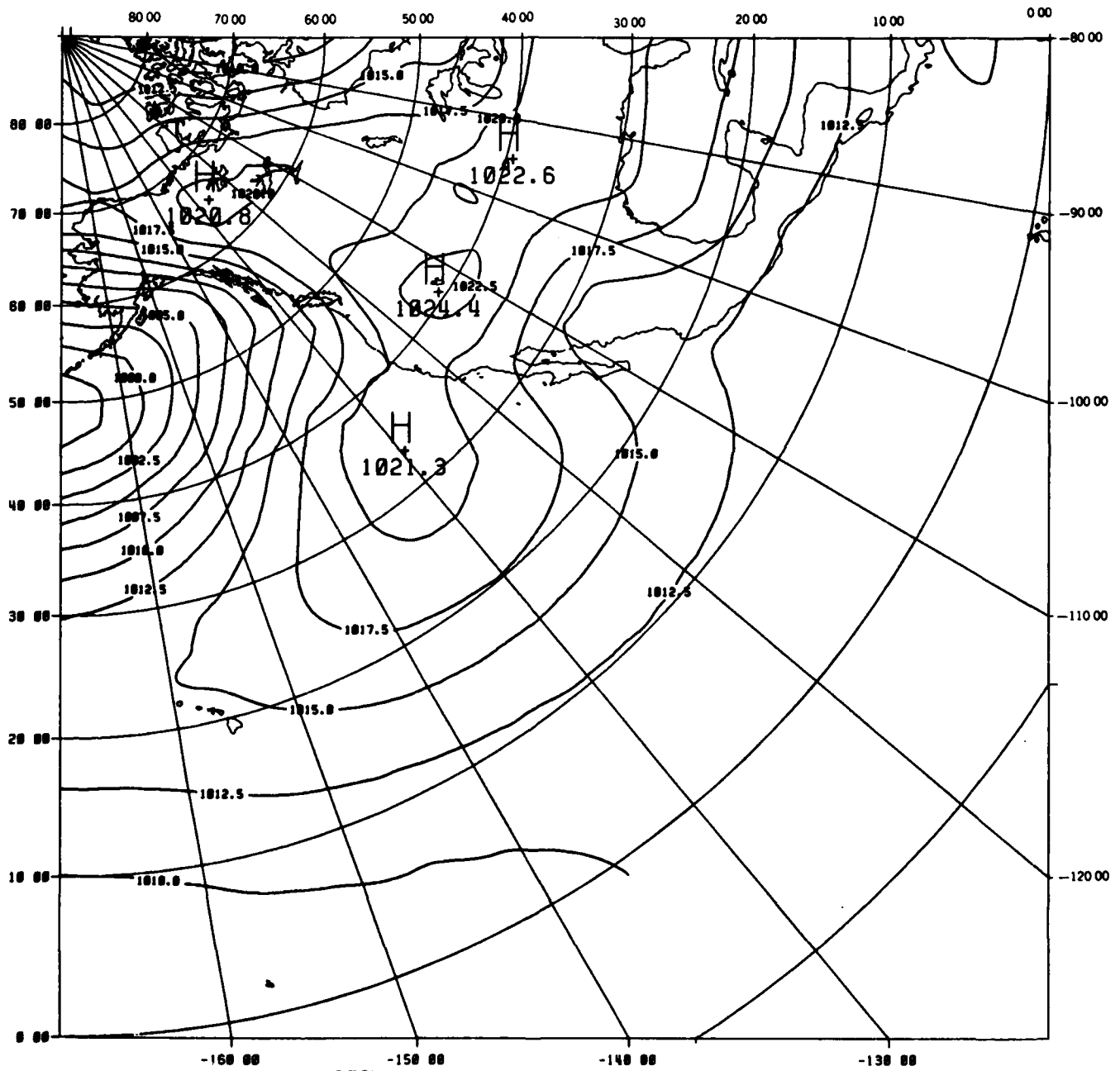
FIGURE A-7



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
FOURTH QUADRANT

JANUARY
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

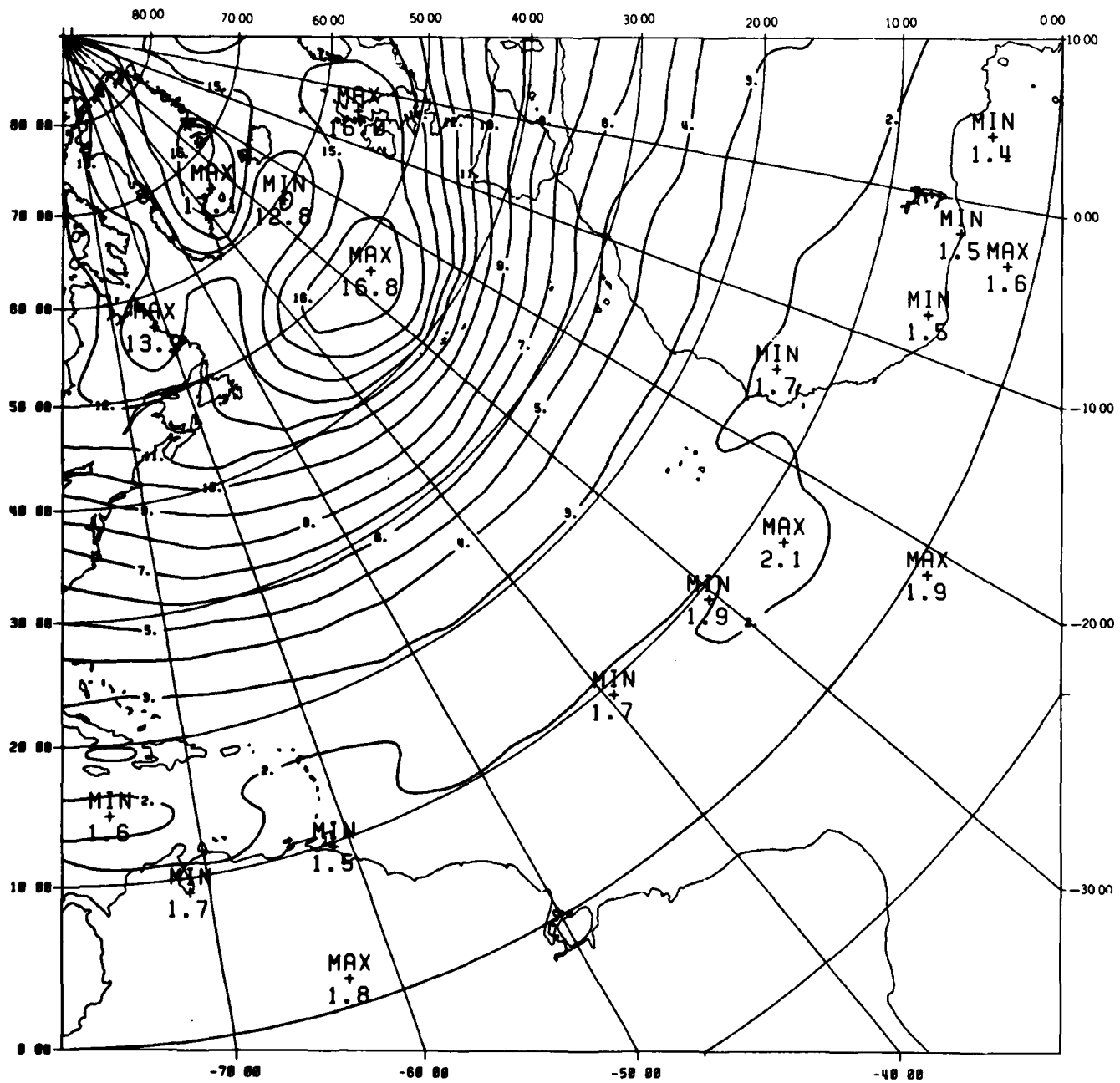
FIGURE A-8



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
FOURTH QUADRANT

JANUARY
MEAN SEA LEVEL
PRESSURE, MILLIBARS

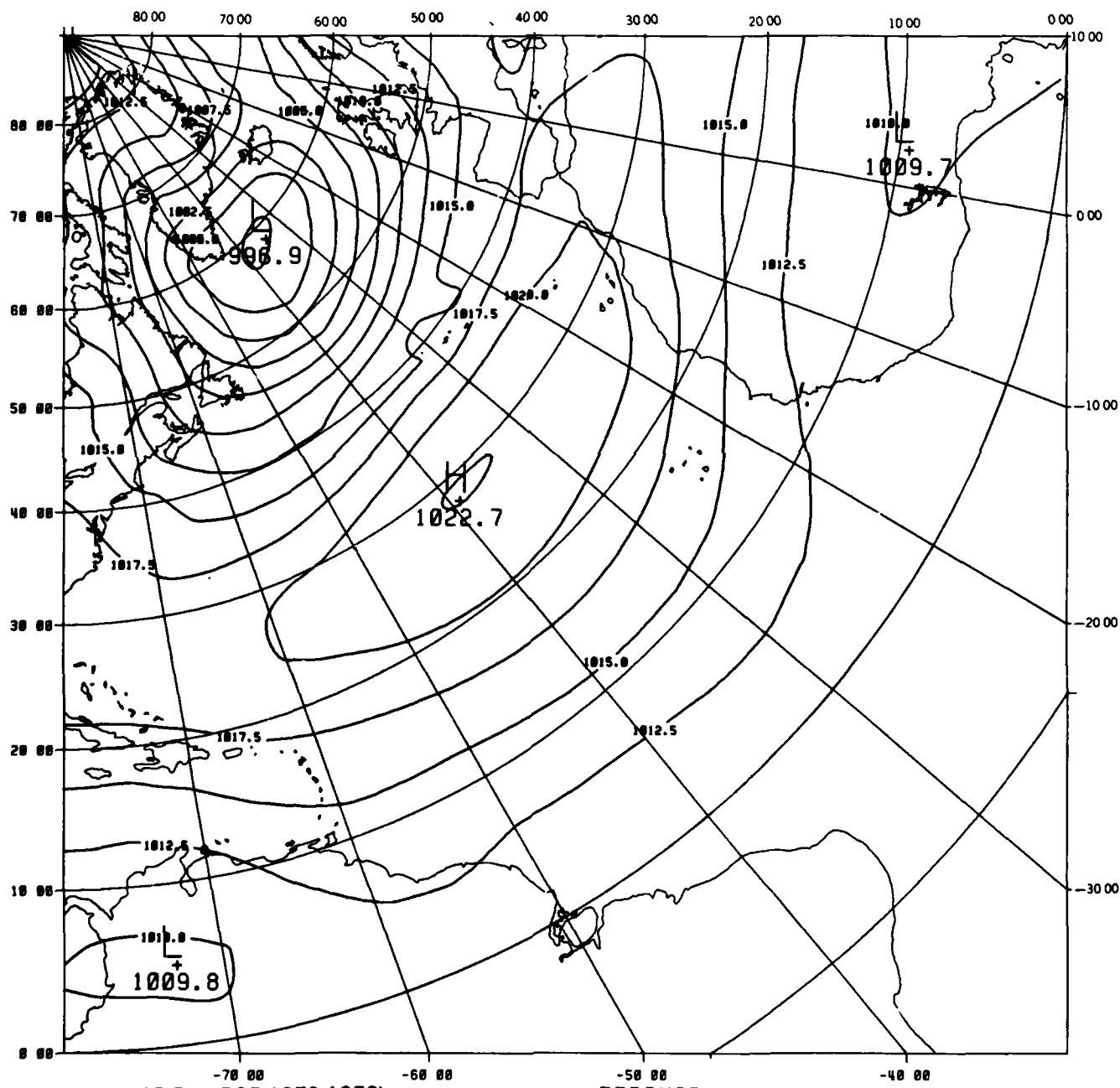
FIGURE A-9



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
FIRST QUADRANT

FEBRUARY
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

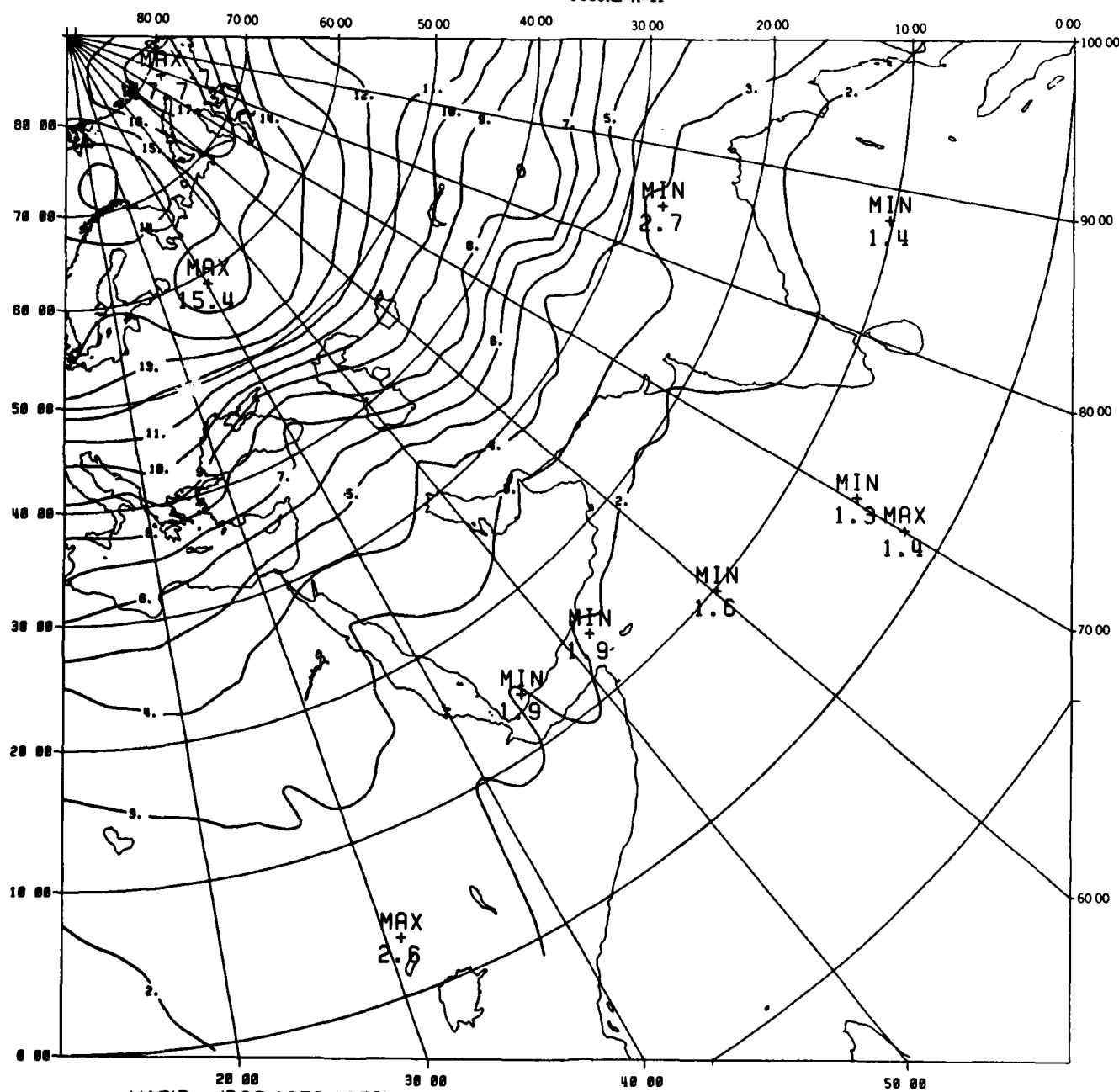
FIGURE A-10



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
FIRST QUADRANT

FEBRUARY
MEAN SEA LEVEL
PRESSURE, MILLIBARS

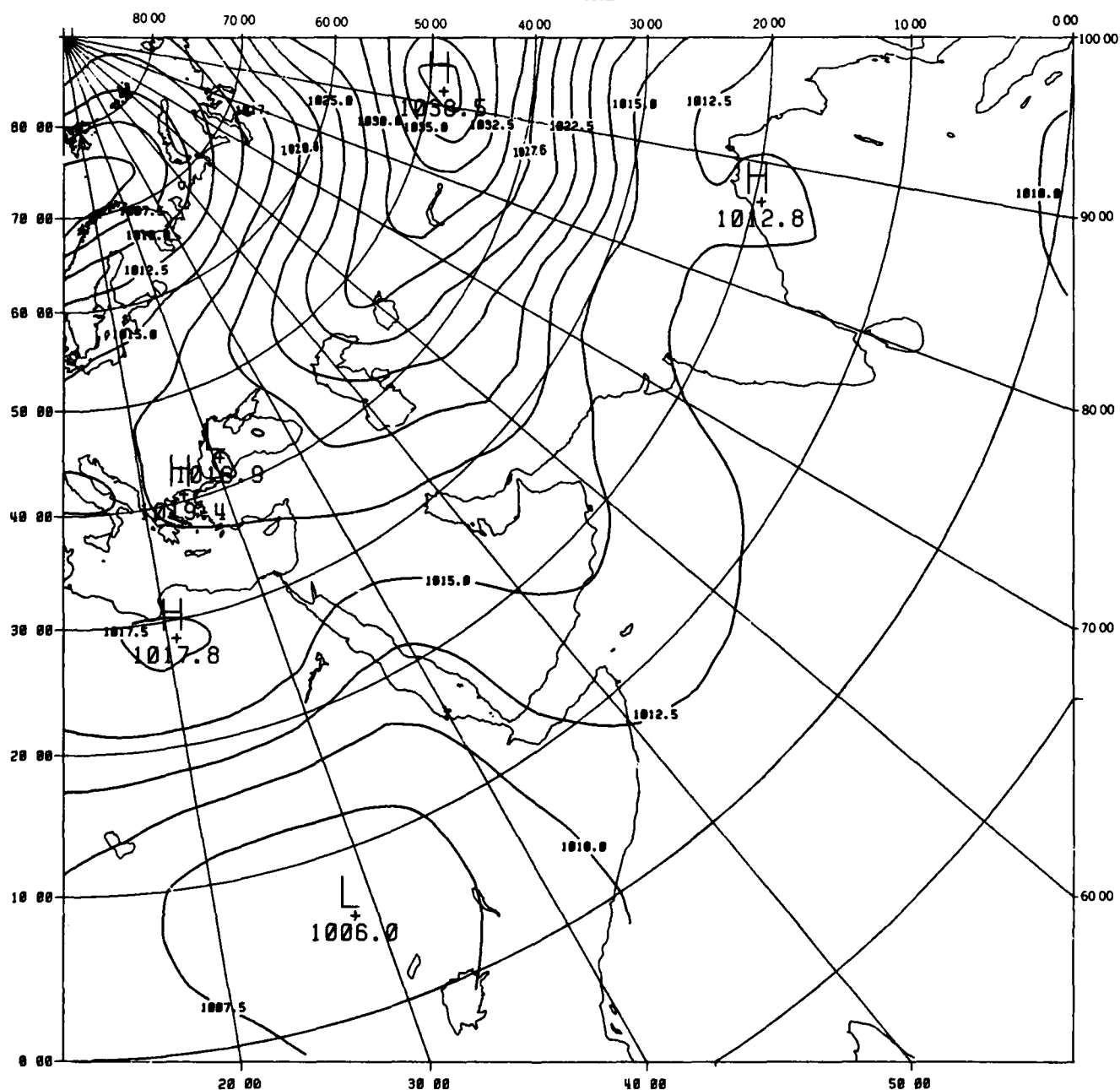
FIGURE A-11



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
SECOND QUADRANT

FEBRUARY
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

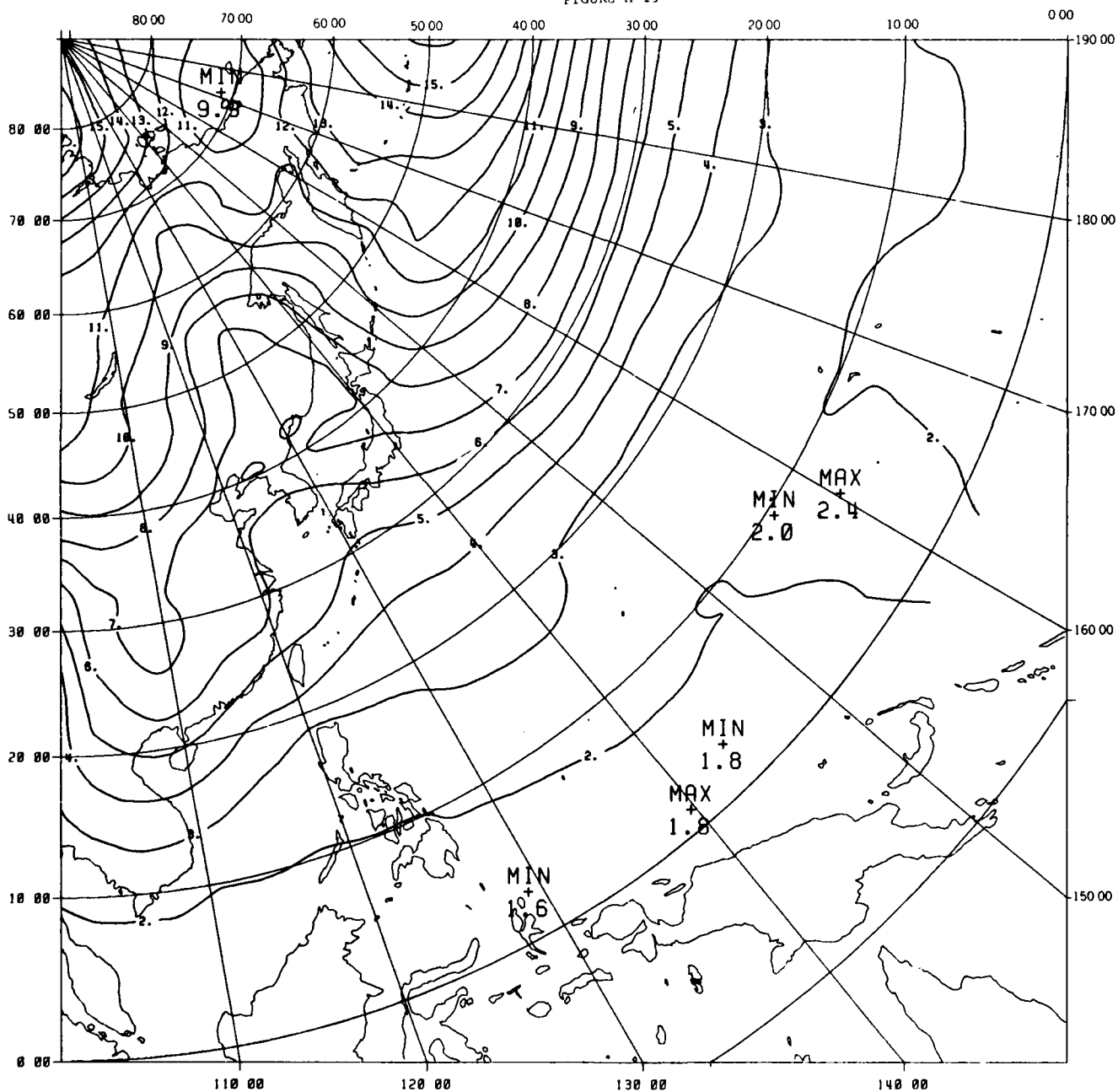
FIGURE A-12



UAIIP (POR 1973-1978)
NORTHERN HEMISPHERE
SECOND QUADRANT

FEBRUARY
MEAN SEA LEVEL
PRESSURE, MILLIBARS

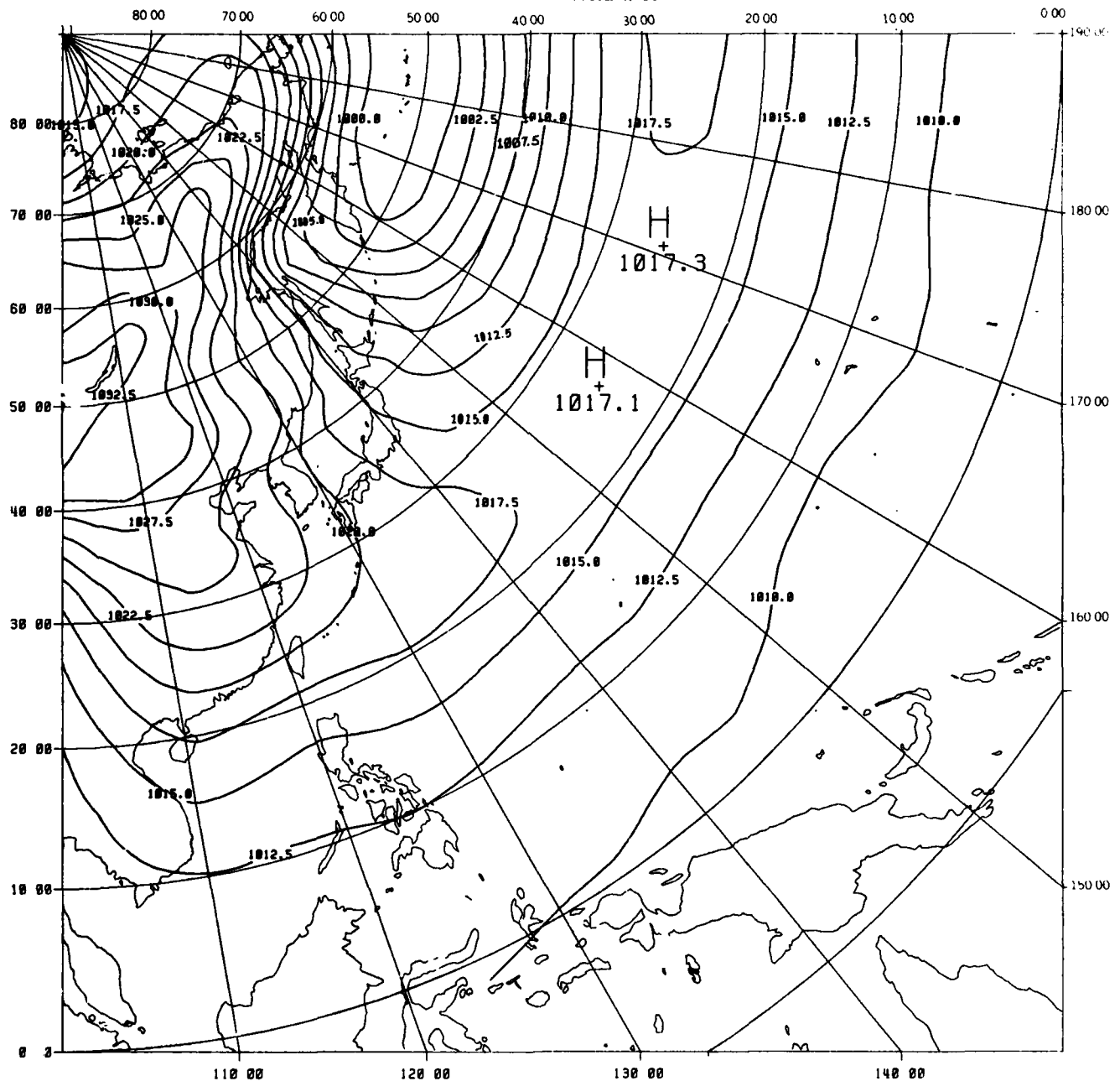
FIGURE A-13



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
THIRD QUADRANT

FEBRUARY
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

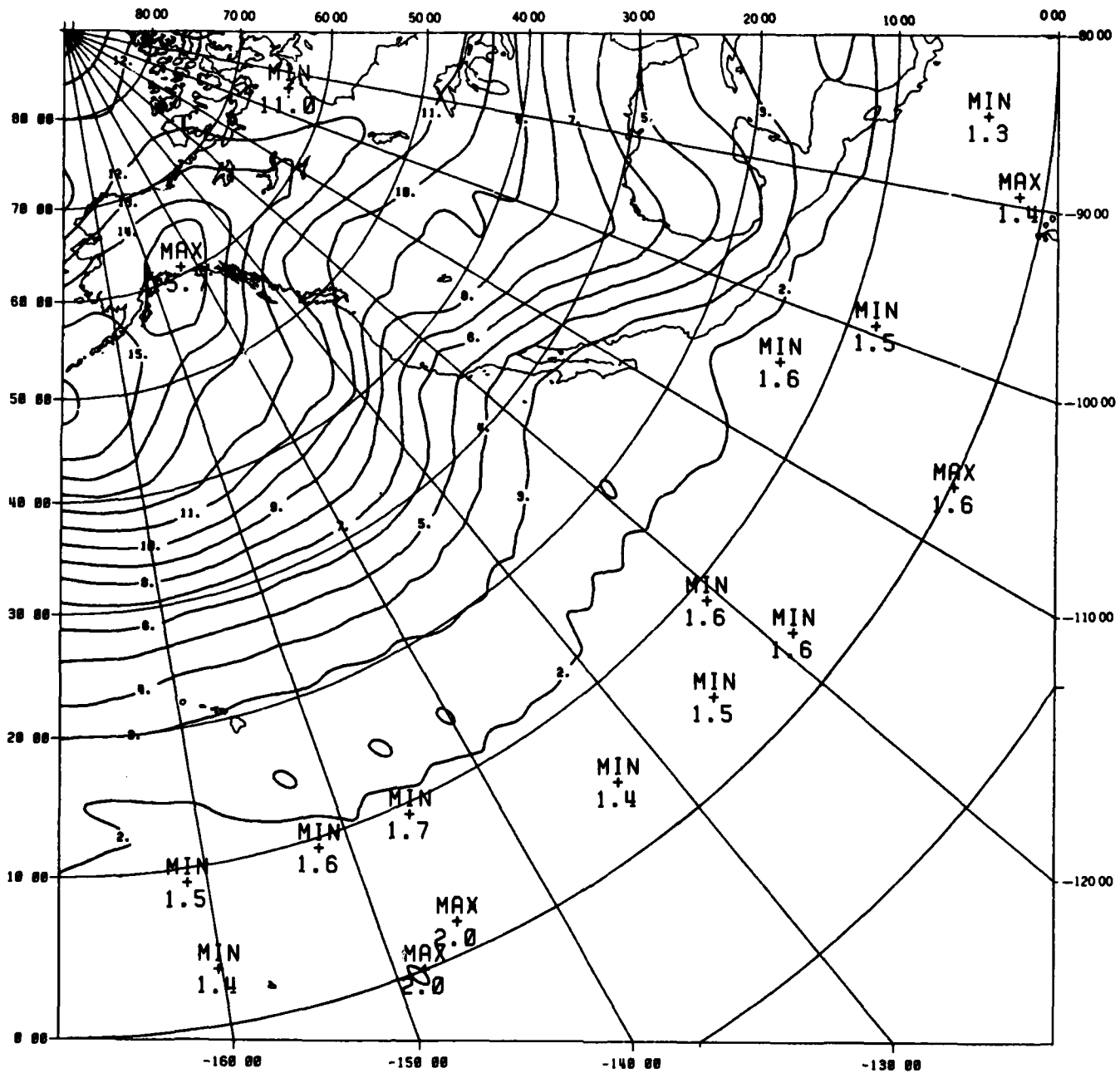
FIGURE A-14



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
THIRD QUADRANT

FEBRUARY
MEAN SEA LEVEL
PRESSURE, MILLIBARS

FIGURE A-15

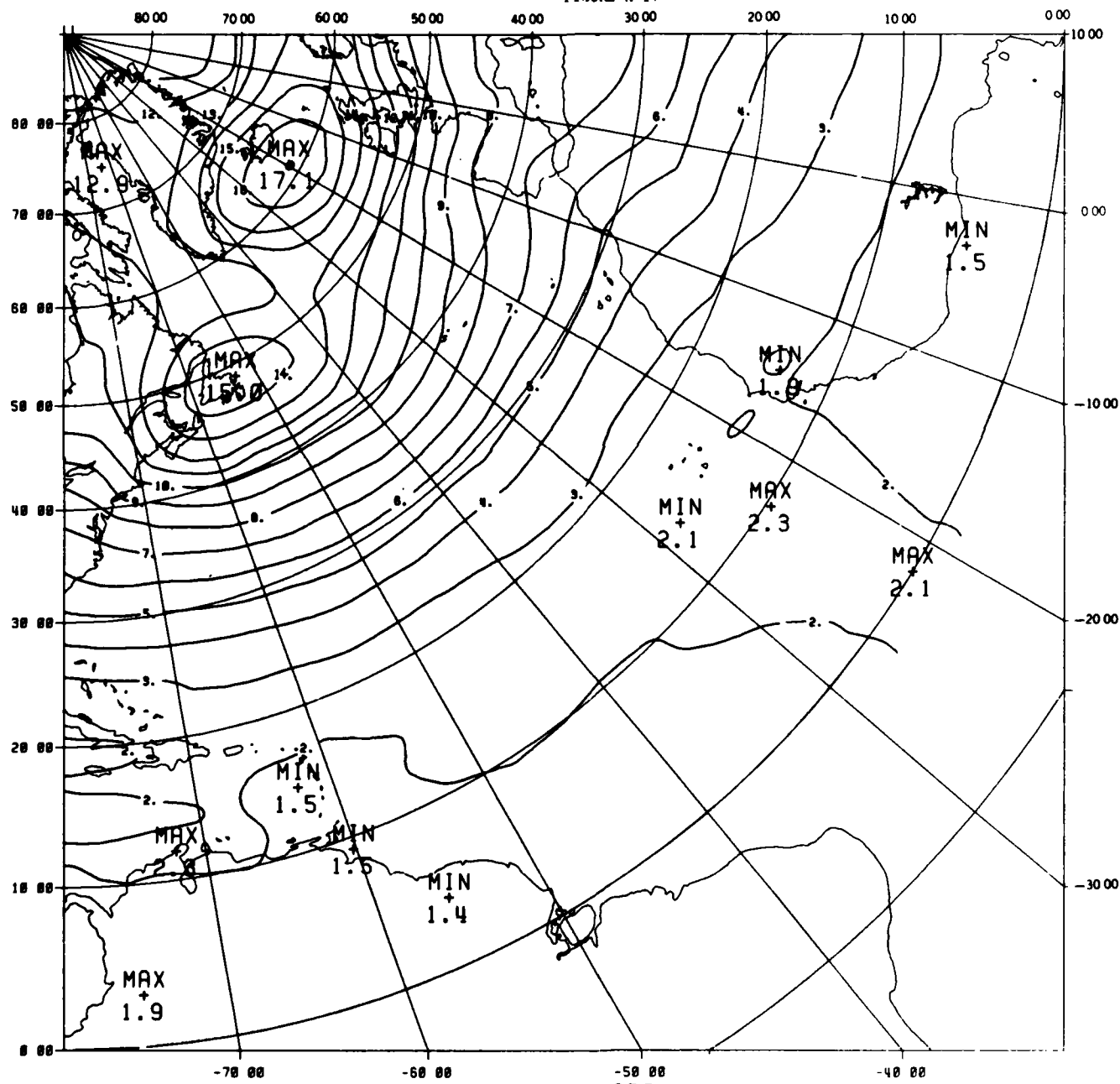


UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
FOURTH QUADRANT

FEBRUARY
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

FEBRUARY
MEAN SEA LEVEL
PRESSURE, MILLIBARS

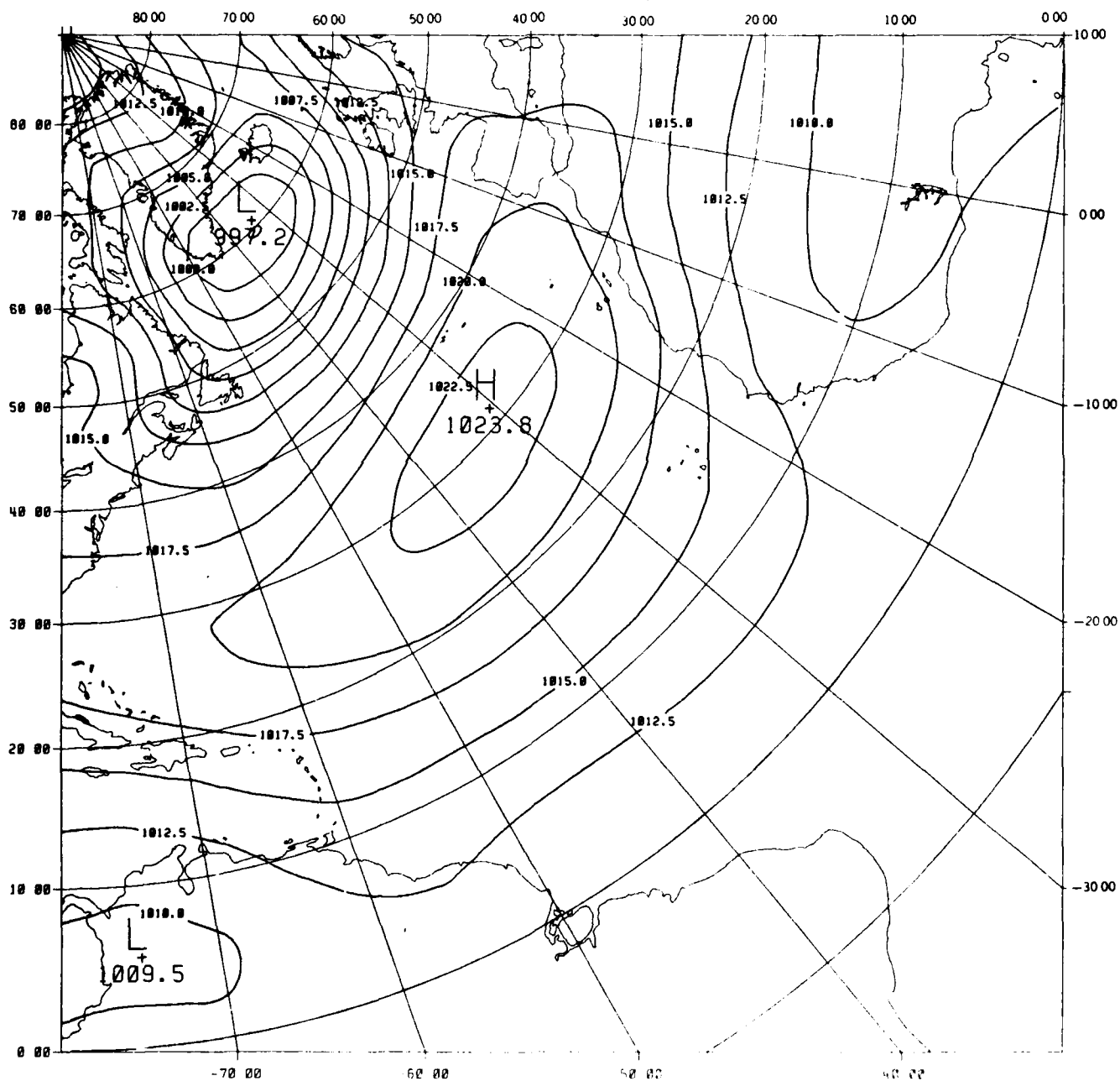
FIGURE A-17



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
FIRST QUADRANT

MARCH
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

FIGURE A-18

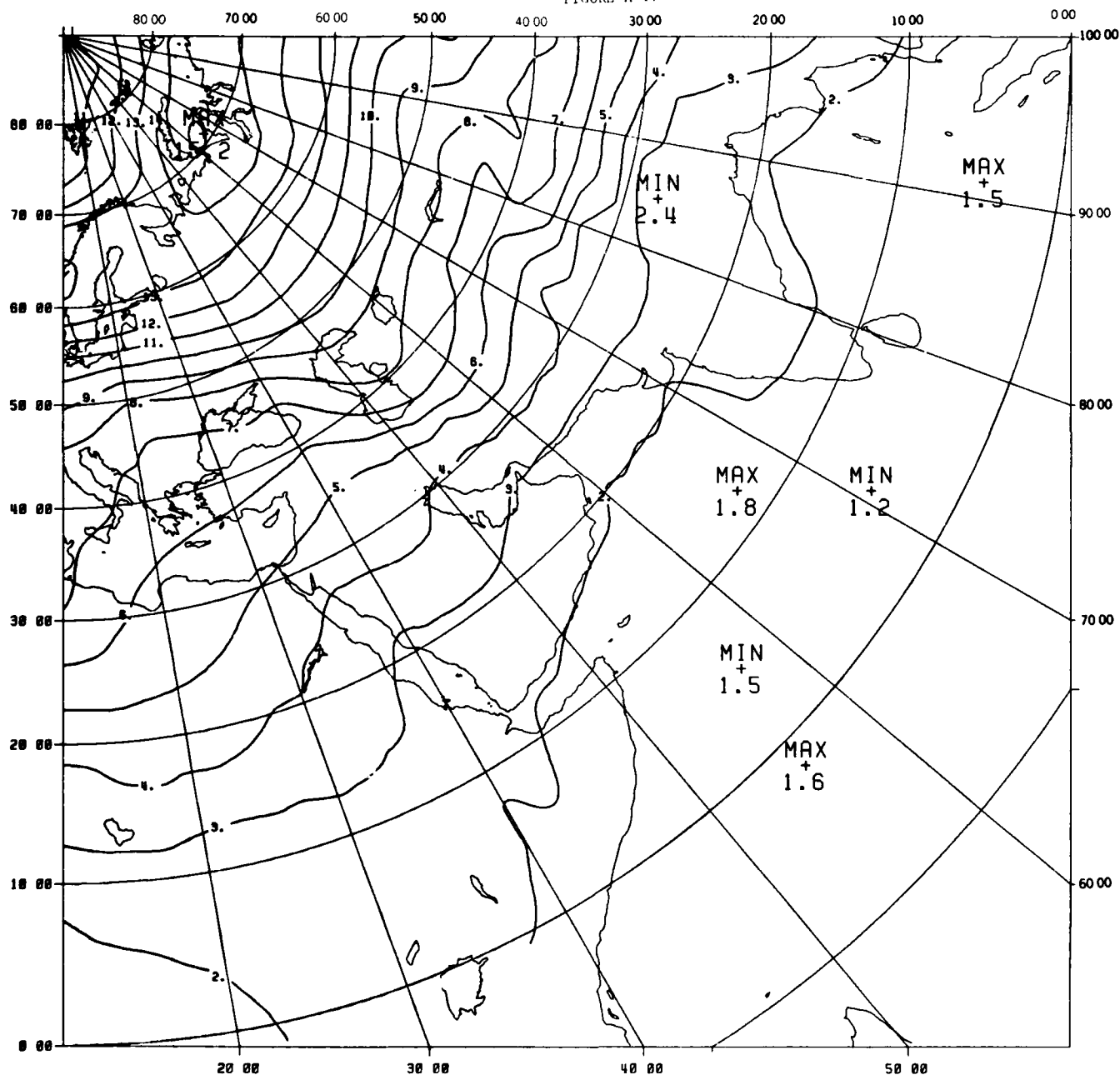


UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
FIRST QUADRANT

MARCH
MEAN SEA LEVEL
PRESSURE, MILLIBARS

A-19

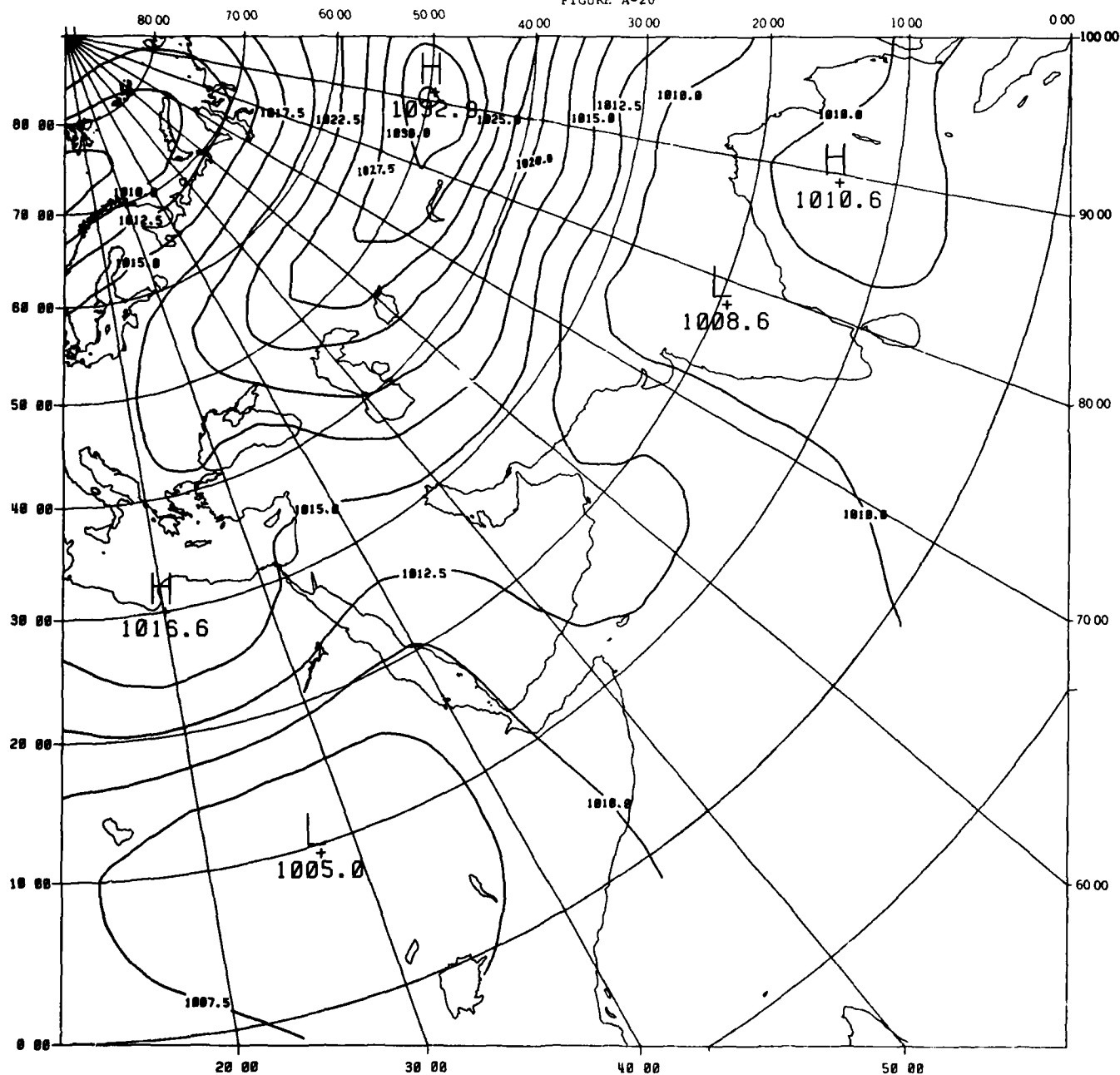
FIGURE A-19



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
SECOND QUADRANT

MARCH
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

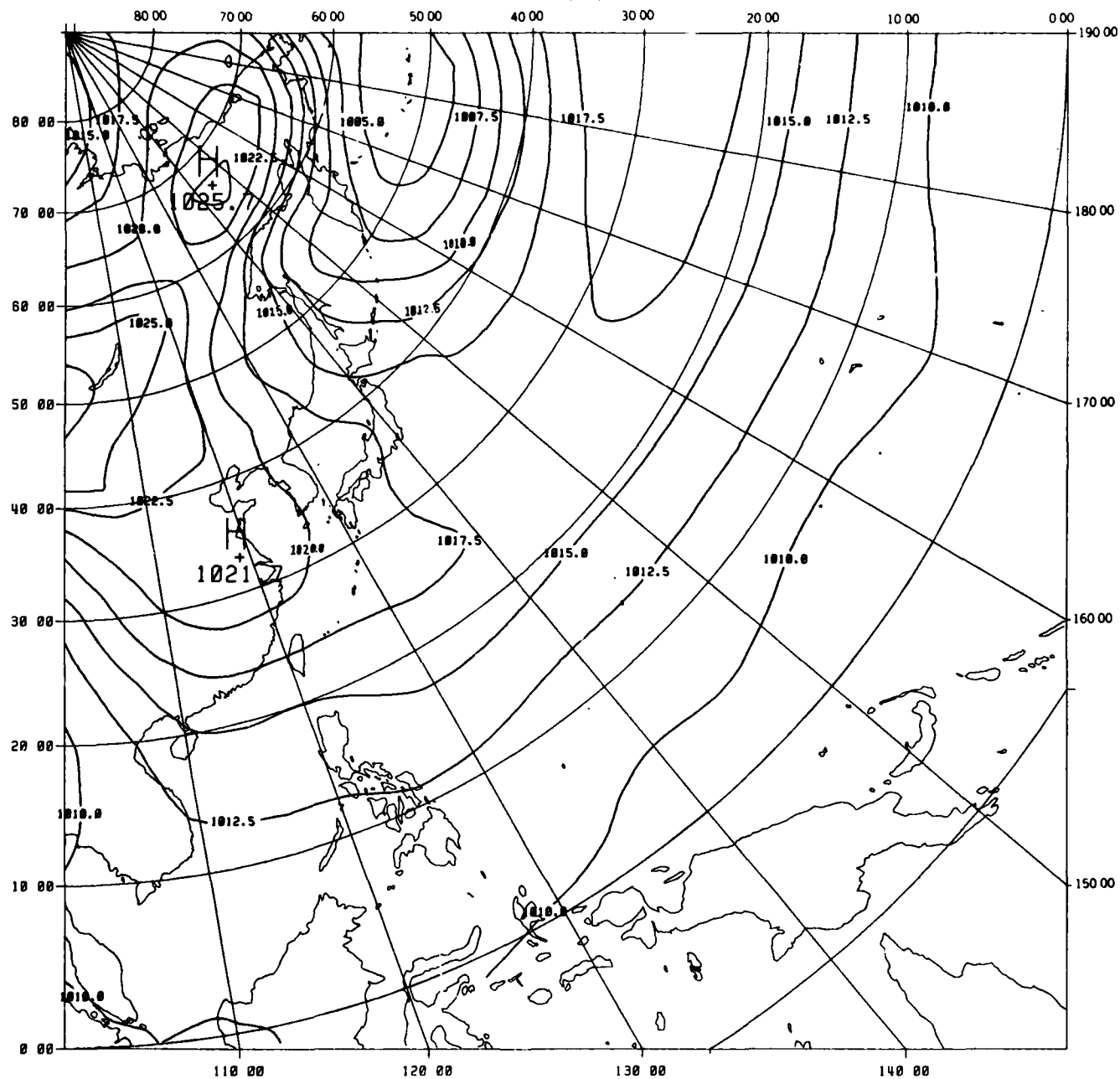
FIGURE A-20



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
SECOND QUADRANT

MARCH
MEAN SEA LEVEL
PRESSURE, MILLIBARS

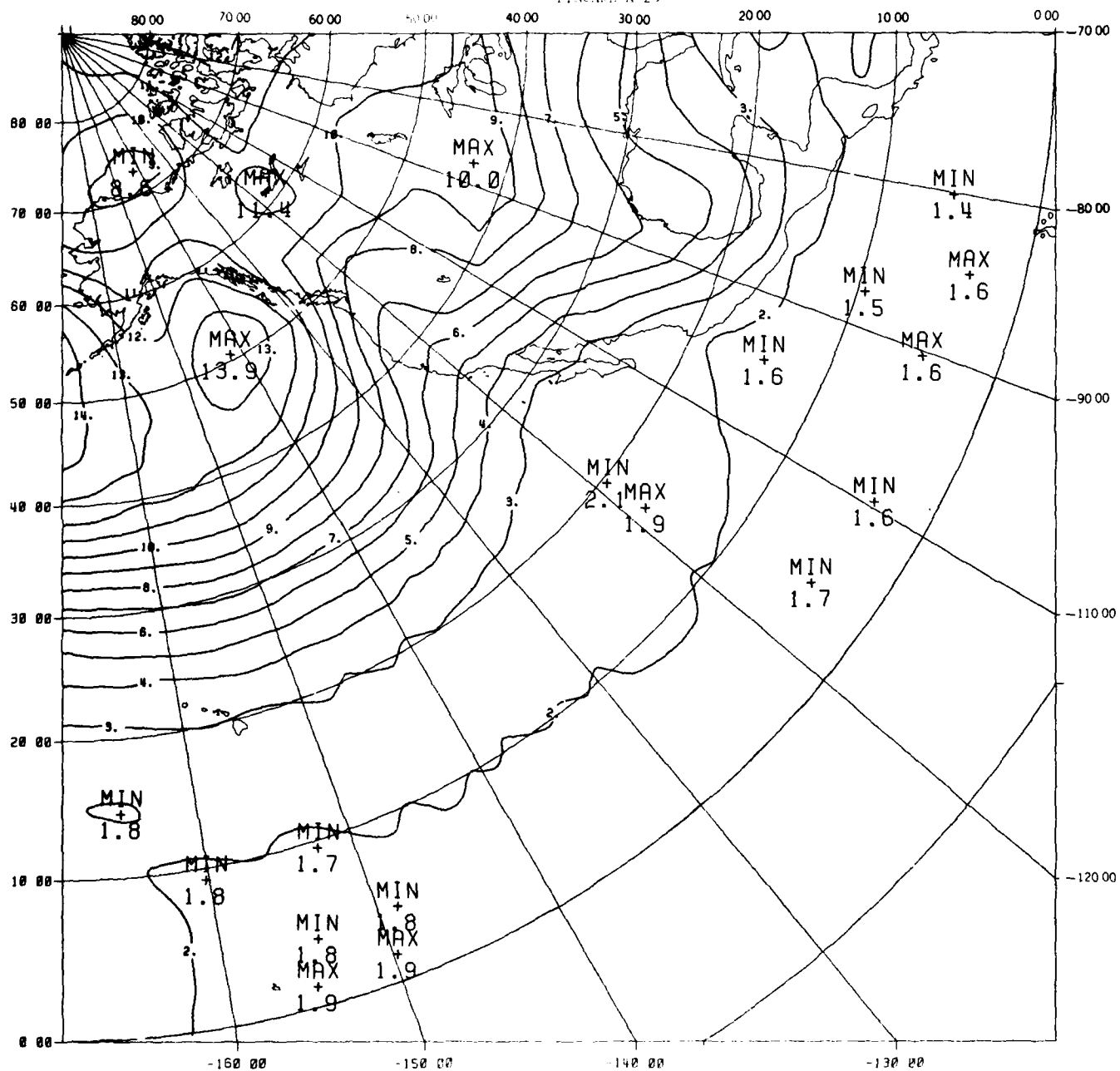
FIGURE A-22



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
THIRD QUADRANT

MARCH
MEAN SEA LEVEL
PRESSURE, MILLIBARS

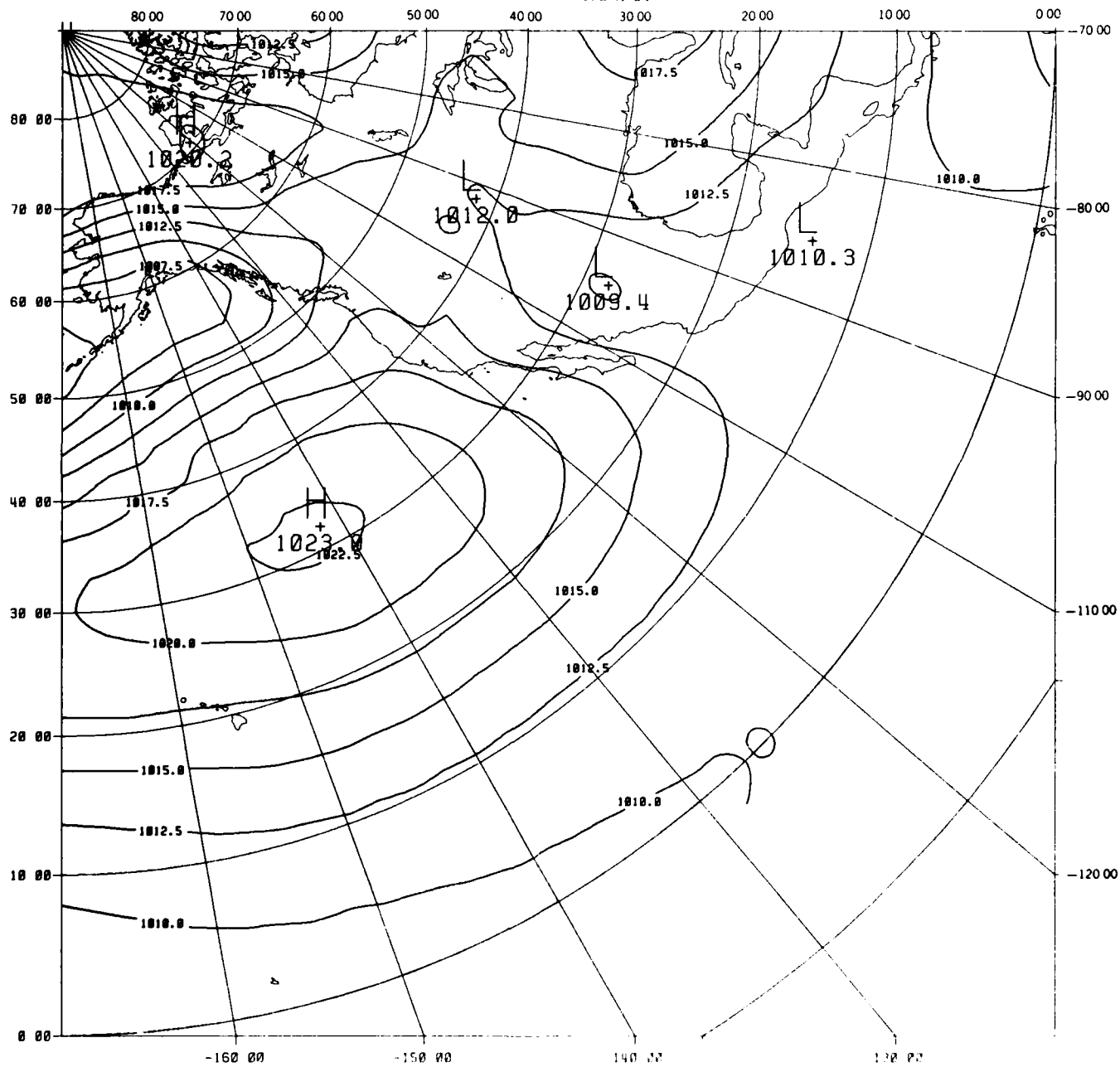
FIGURE A-23



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
FOURTH QUADRANT

MARCH
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

FIGURE A-24

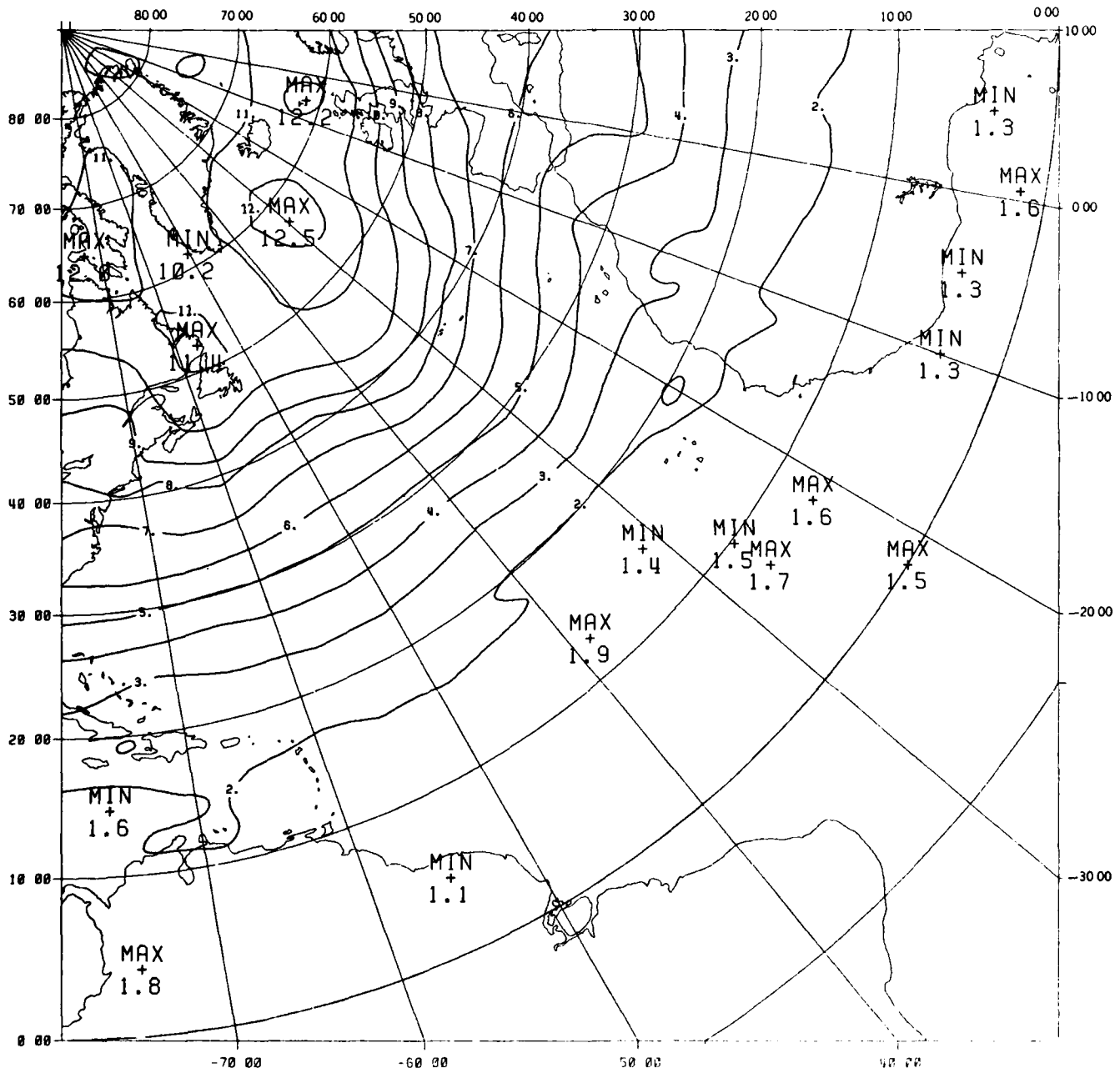


UAIIP (POR 1973-1978)
NORTHERN HEMISPHERE
FOURTH QUADRANT

MARCH
MEAN SEA LEVEL
PRESSURE, MB. 10-453

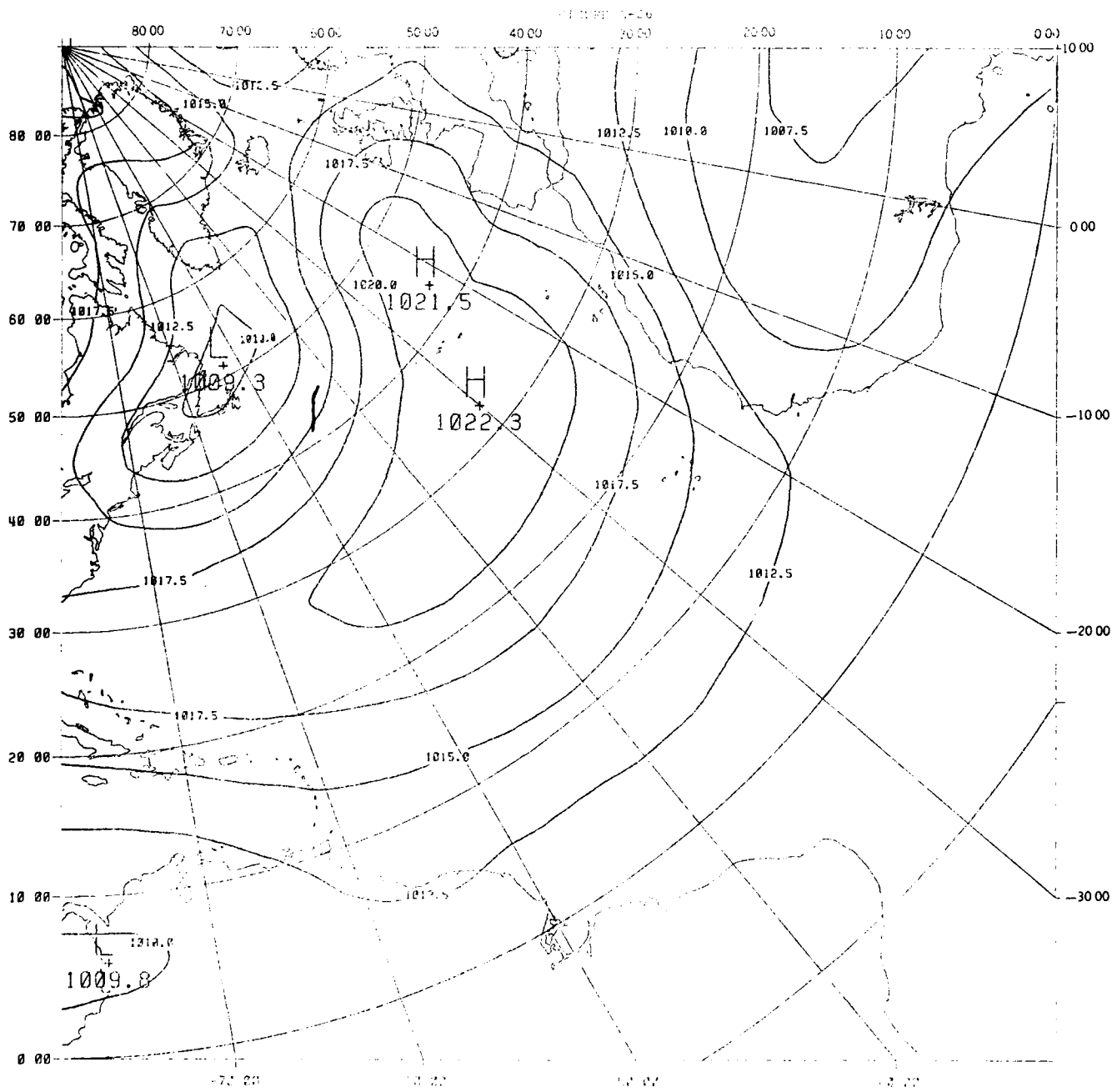
 $\Delta = 2$

FIGURE A-25



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
FIRST QUADRANT

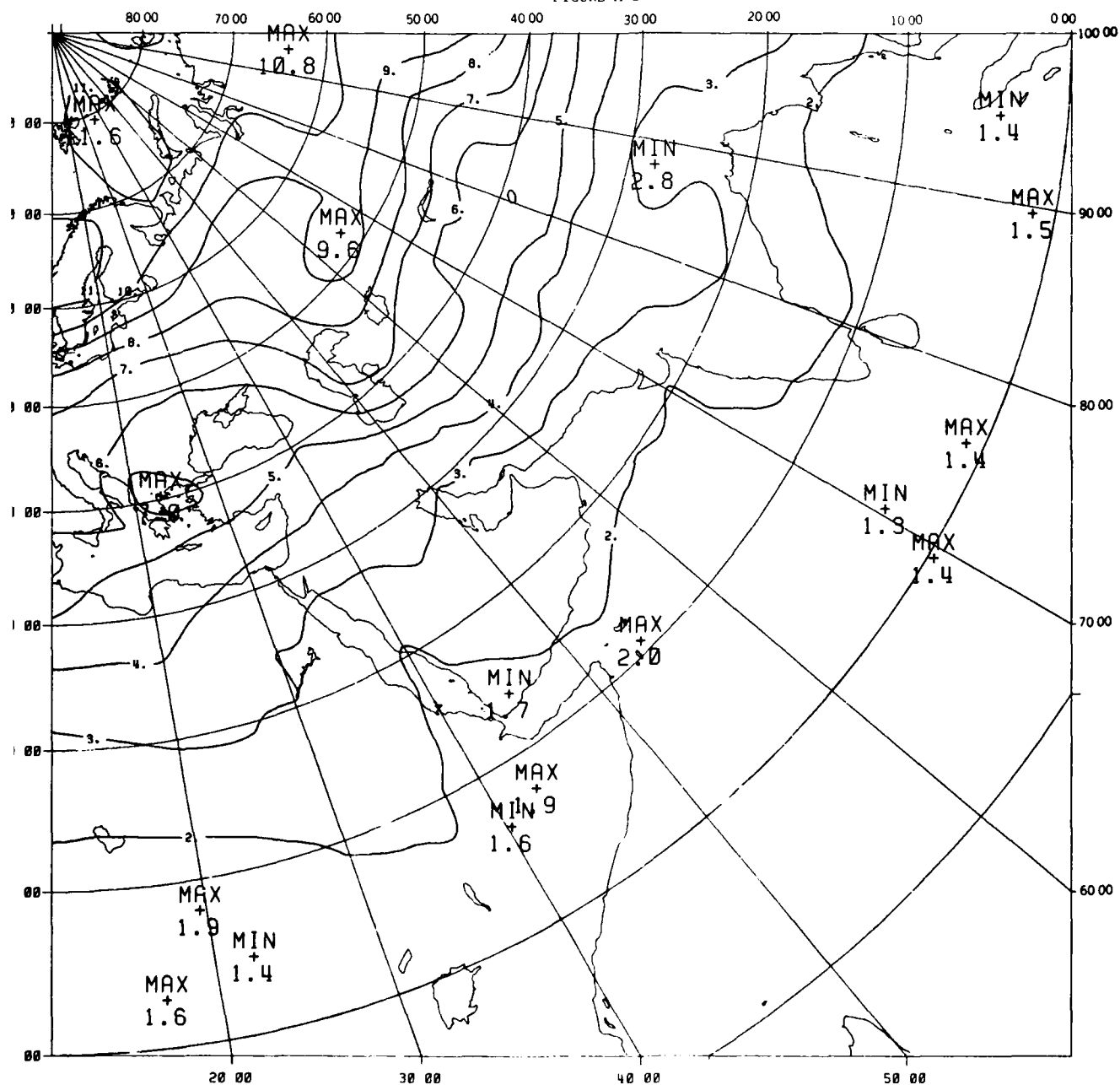
APRIL
MEAN SEA LEVEL
SIDE OF PRESSURE, MILLIBARS



DATE: 10/17/50
 NORTH ATLANTIC OCEAN
 FIRST OF JUNE

TIME: 0000
 PRESSURE LEVEL
 IN HIGHER MILLIBARS

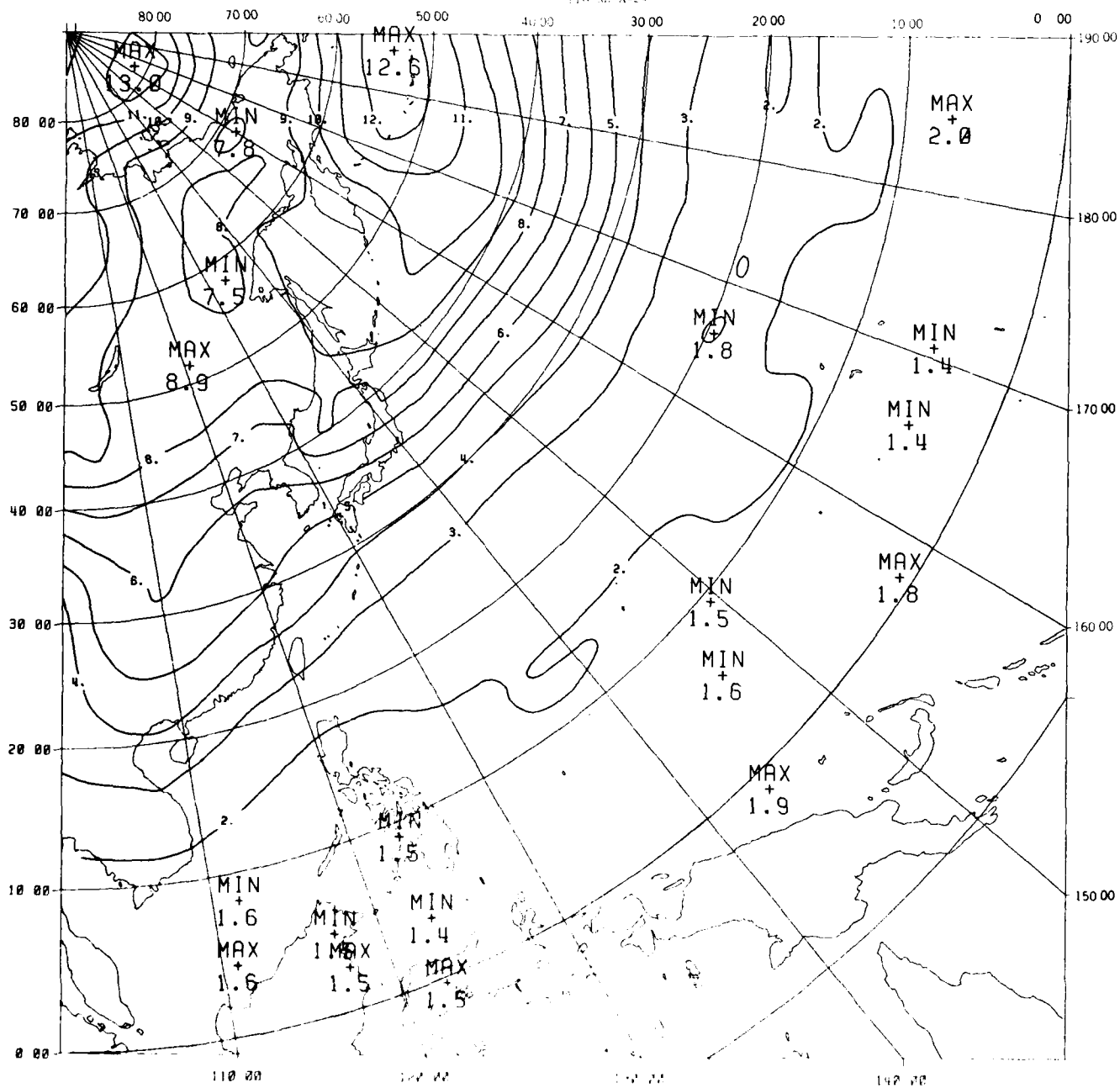
FIGURE A-27



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
SECOND QUADRANT

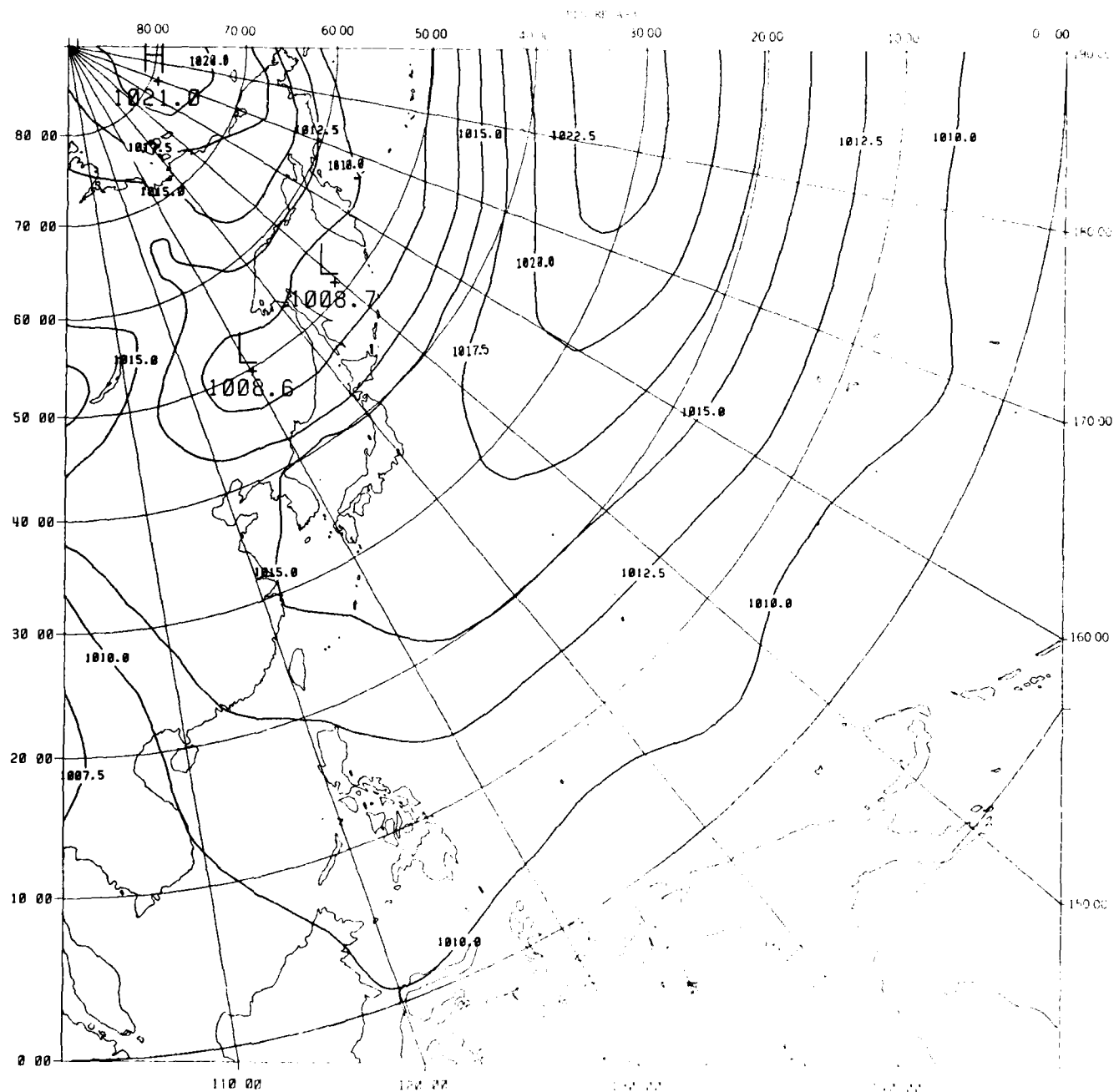
APRIL
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

FIGURE A-24



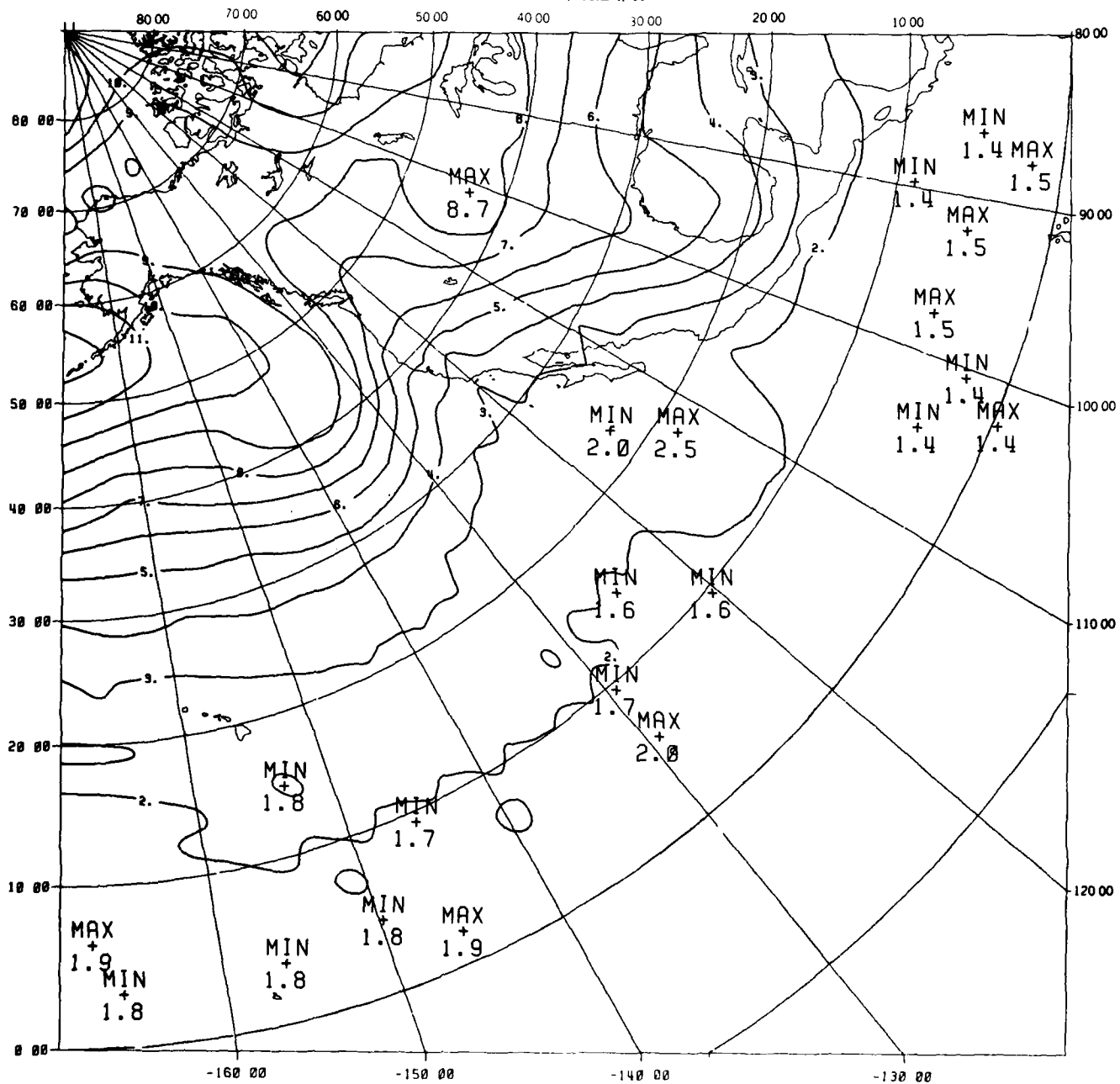
UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
THIRD QUANT

UNITED STATES GOVERNMENT
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
WASHINGTON, D.C. 20546



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
THIRD QUADRANT

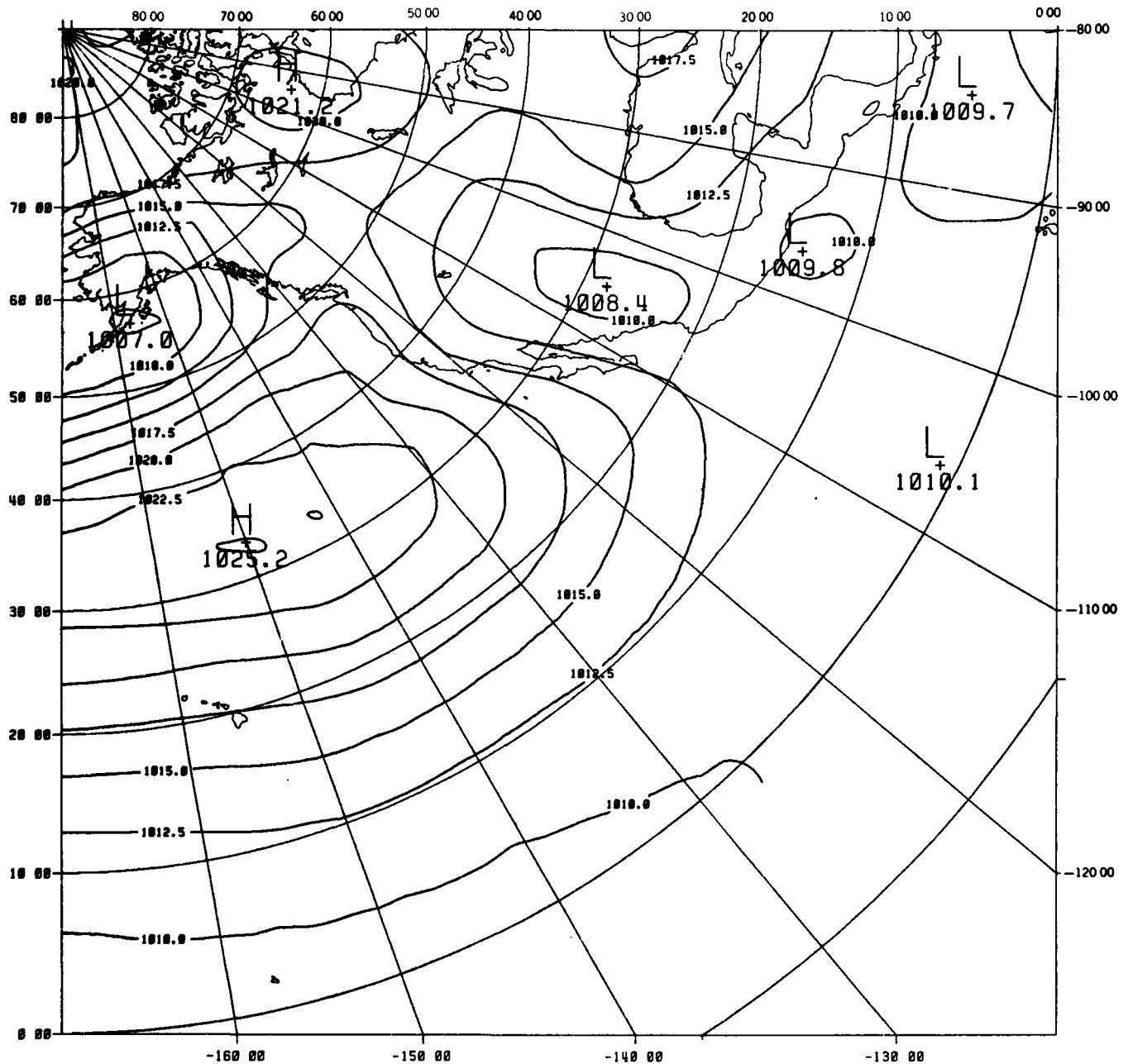
FIGURE A-31



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
FOURTH QUADRANT

APRIL
MEAN SEA LEVEL
SIDEV OF PRESSURE, MILLIBARS

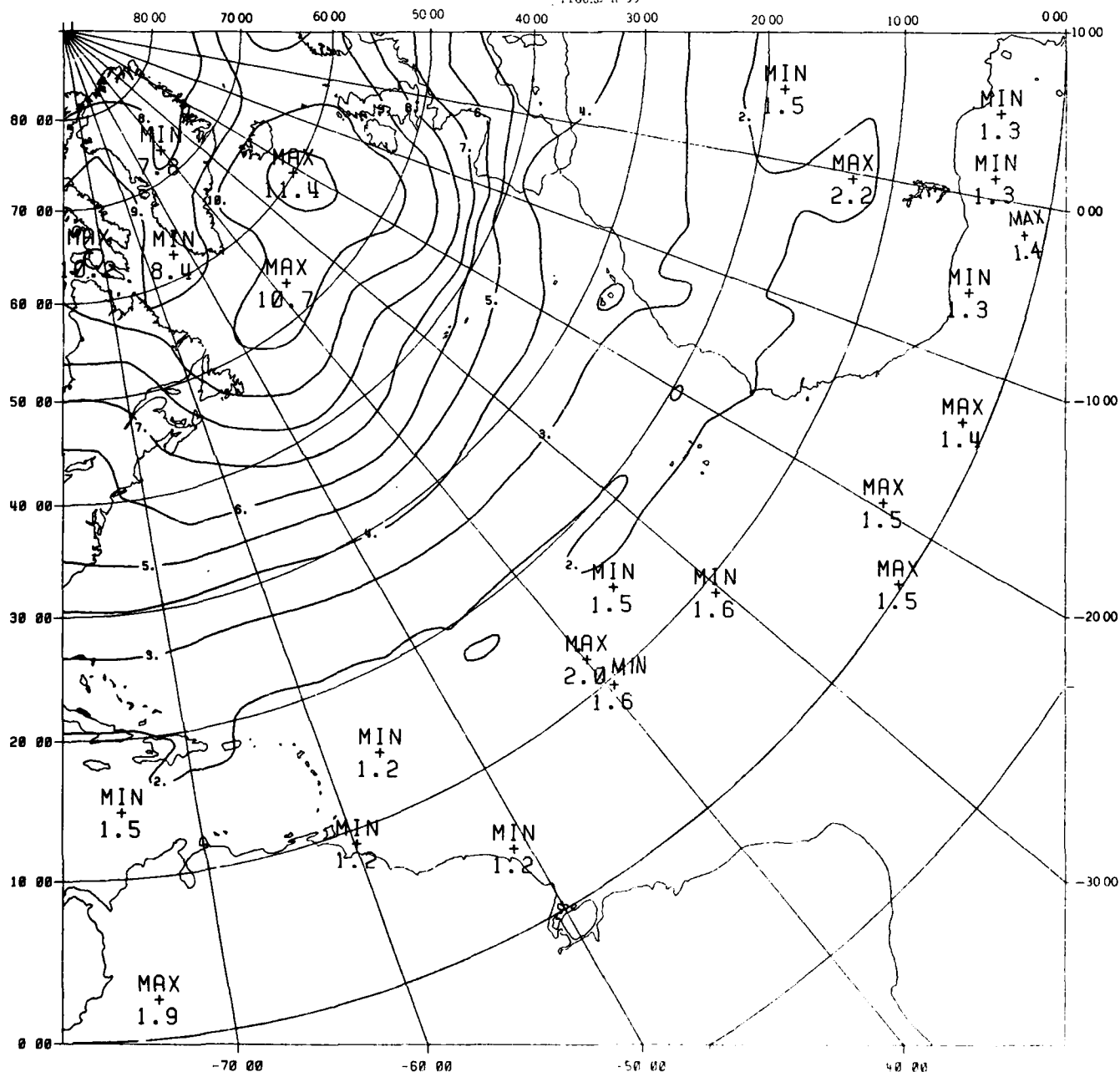
FIGURE A-32



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
FOURTH QUADRANT

APRIL
MEAN SEA LEVEL
PRESSURE, MILLIBARS

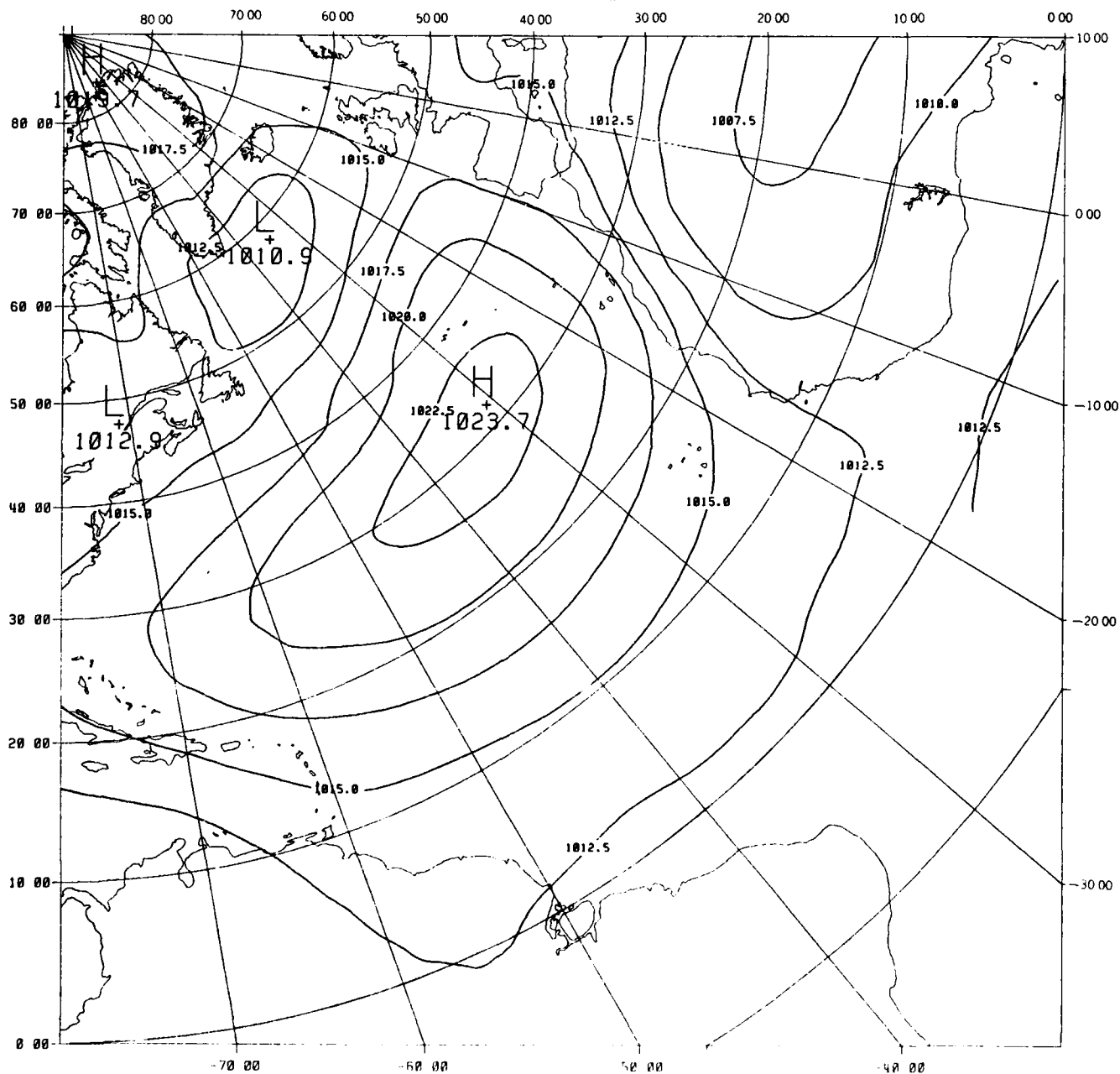
FIGURE A-33



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
FIRST QUADRANT

MAY
MEAN SEA LEVEL
STDEV OF PRECIPITATION, MILLIMETERS

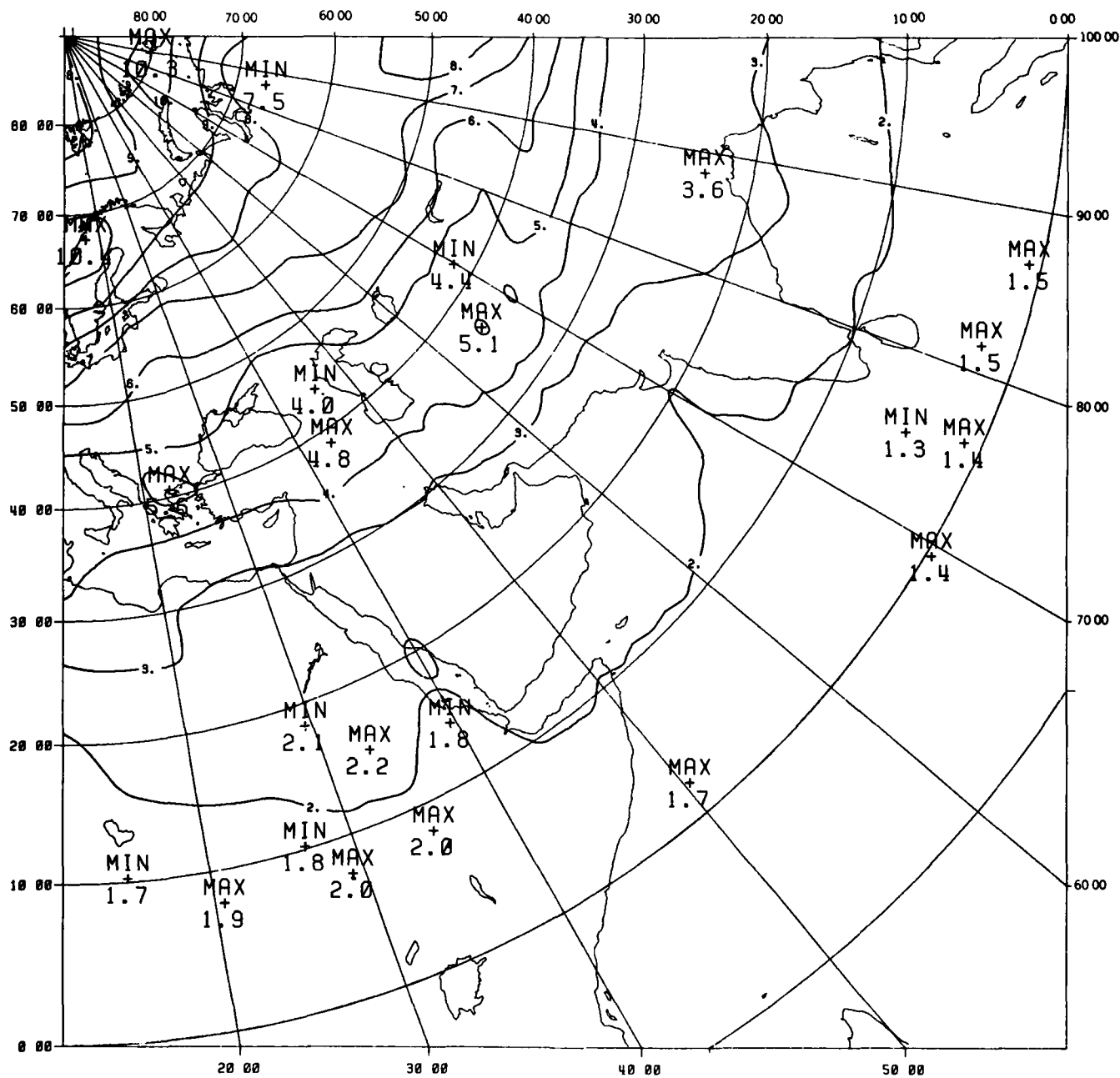
FIGURE A-34



UAIIP (POR 1973-1978)
NORTHERN HEMISPHERE
FIRST QUADRANT

MAY
MEAN SEA LEVEL
PRESSURE, MILLIBARS

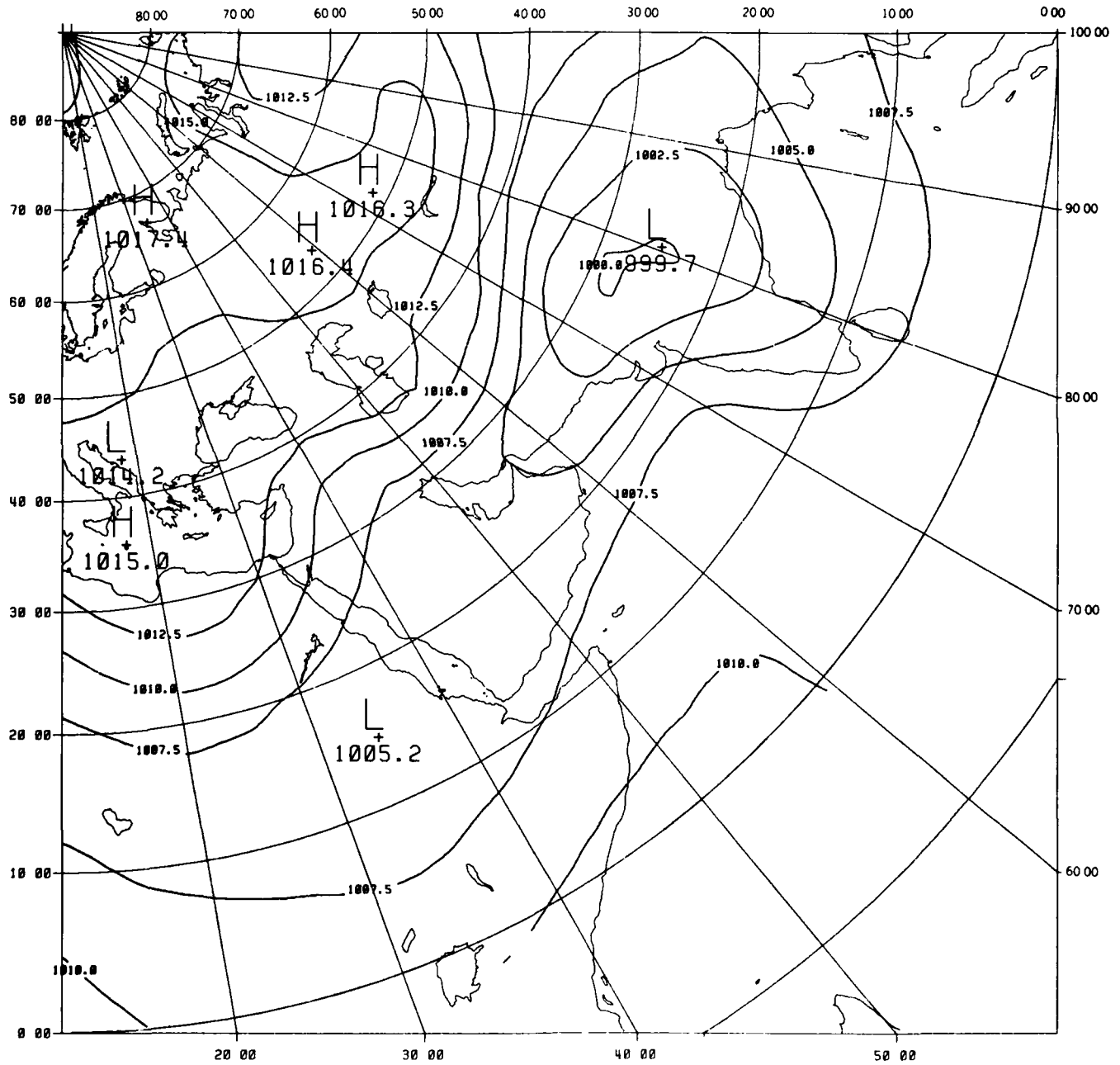
FIGURE A-35



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
SECOND QUADRANT

MAY
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

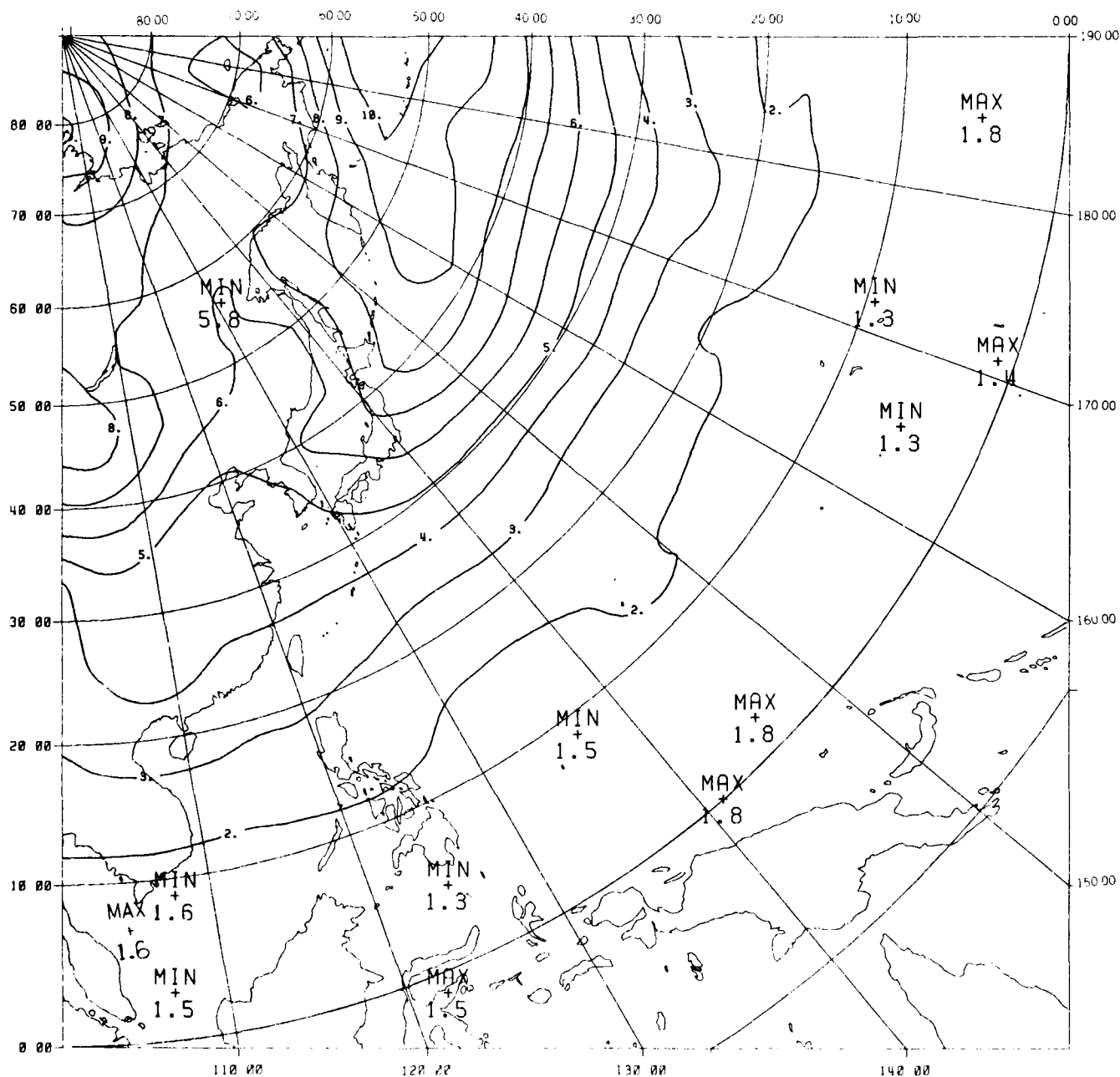
FIGURE A-36



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
SECOND QUADRANT

MAY
MEAN SEA LEVEL
PRESSURE, MILLIBARS

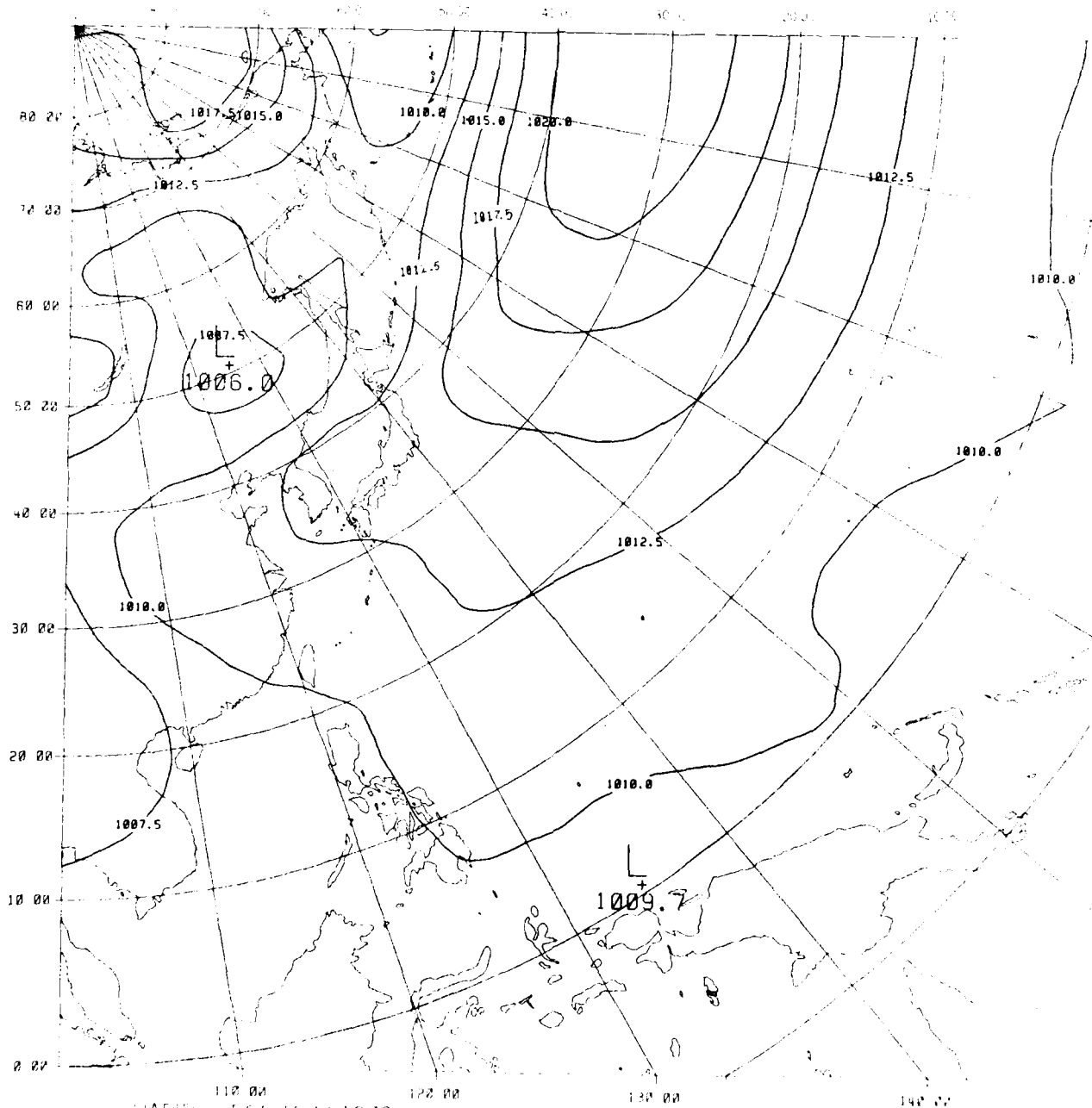
FIGURE A-17



UAPIP (FOR 1973-1978)
NORTHERN HEMISPHERE
THIRD QUADRANT

MAY
MEAN SEA LEVEL
STUDY OF PRESSURE, MILLIBARS

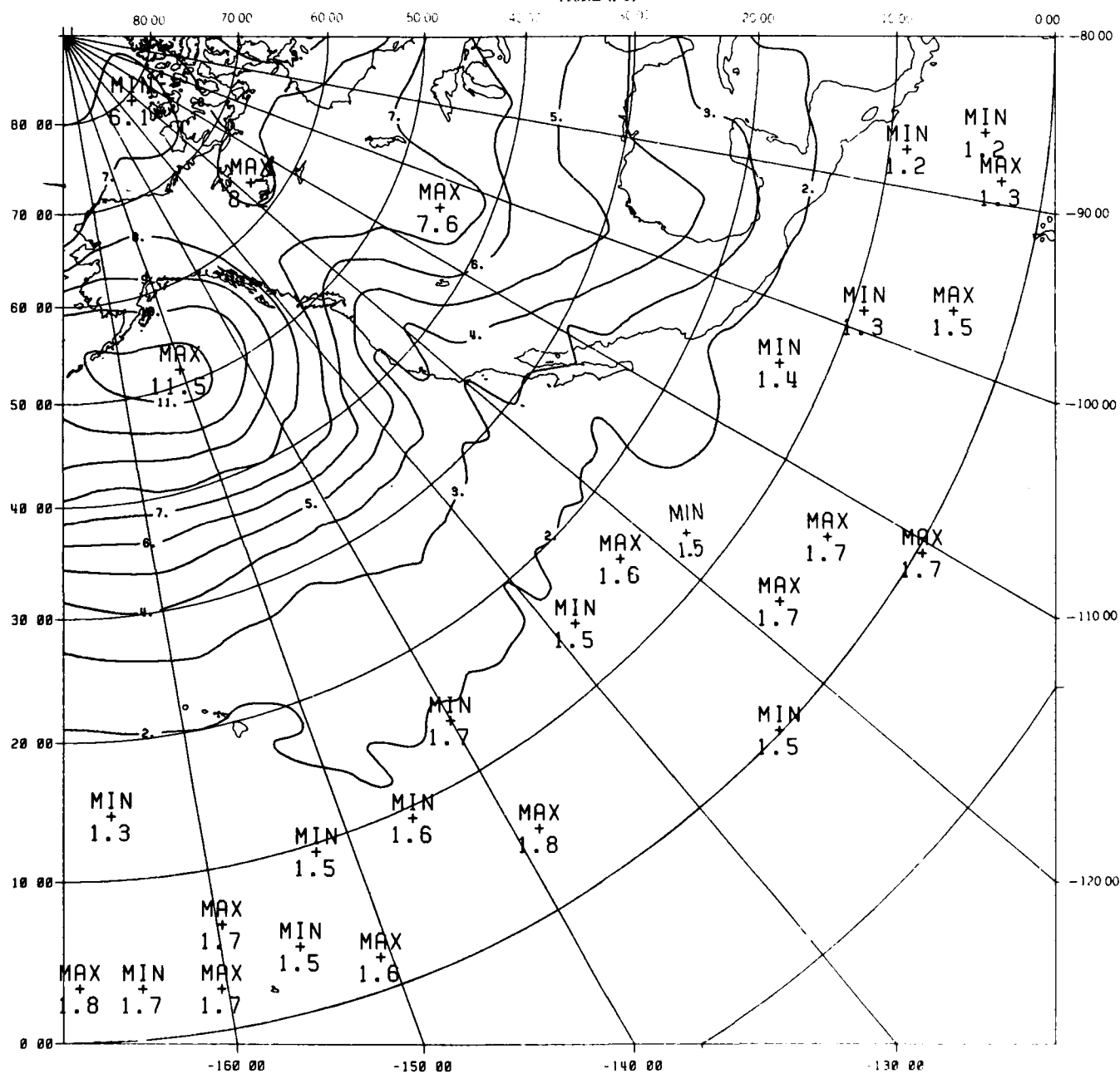
FIGURE 1-14



HAIRP (FOR 19/3 1978)
NO. 1015.0
THERM. 1000.0

MET
MEAN SEA LEVEL
PRESSURE, MILLIBARS

FIGURE A-39



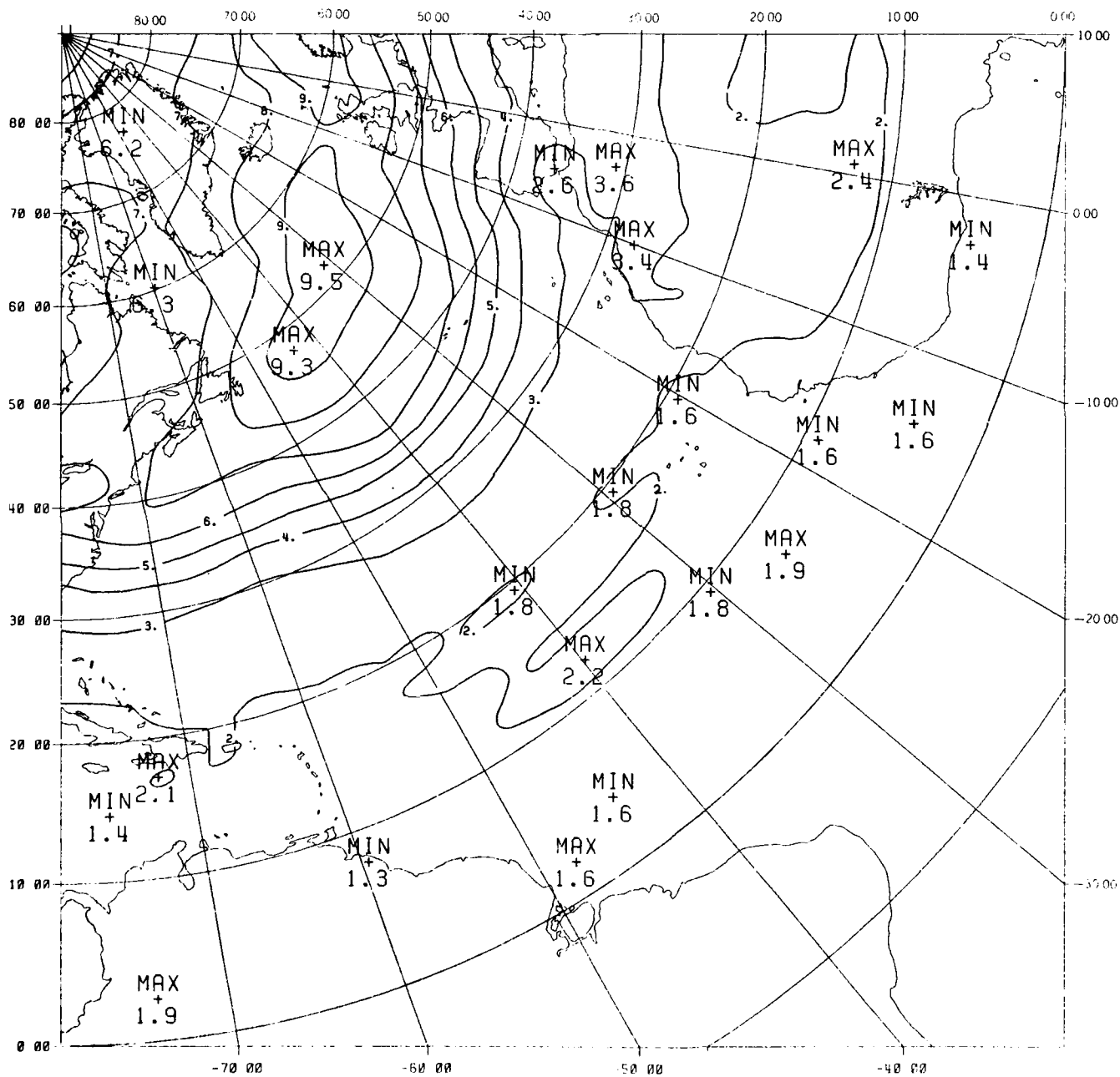
UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
FOURTH QUADRANT

MAY
MEAN SEA LEVEL
SIDE OF PRESSURE, MILLIBARS

MAY
MEAN SEA LEVEL
PRESSURE, MILLIBARS

A-21

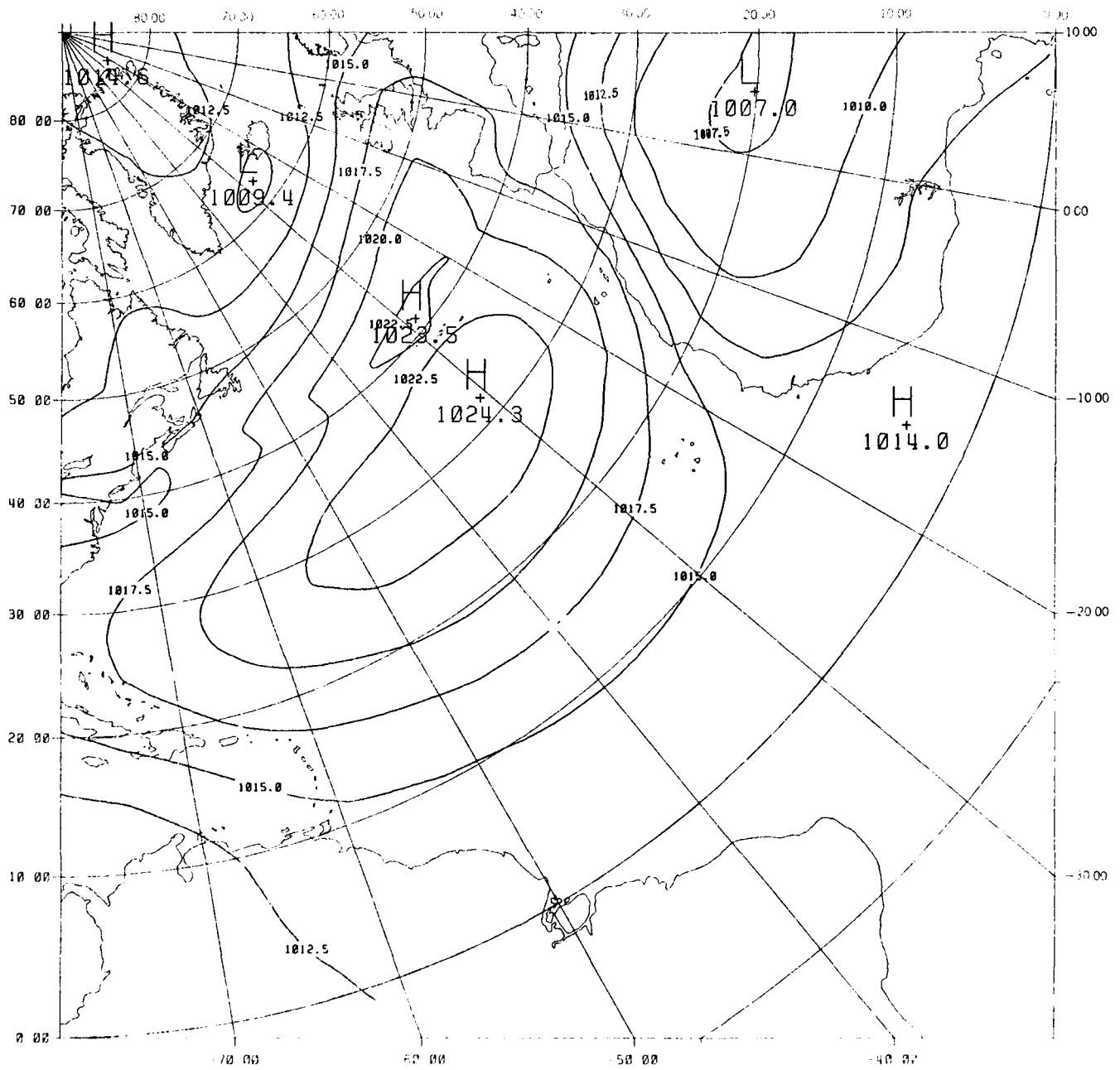
FIGURE A-41



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
FIRST QUADRANT

JUNE
MEAN SEA LEVEL
STORM OF PRESSURE, MILLIBARS

FIGURE A-42

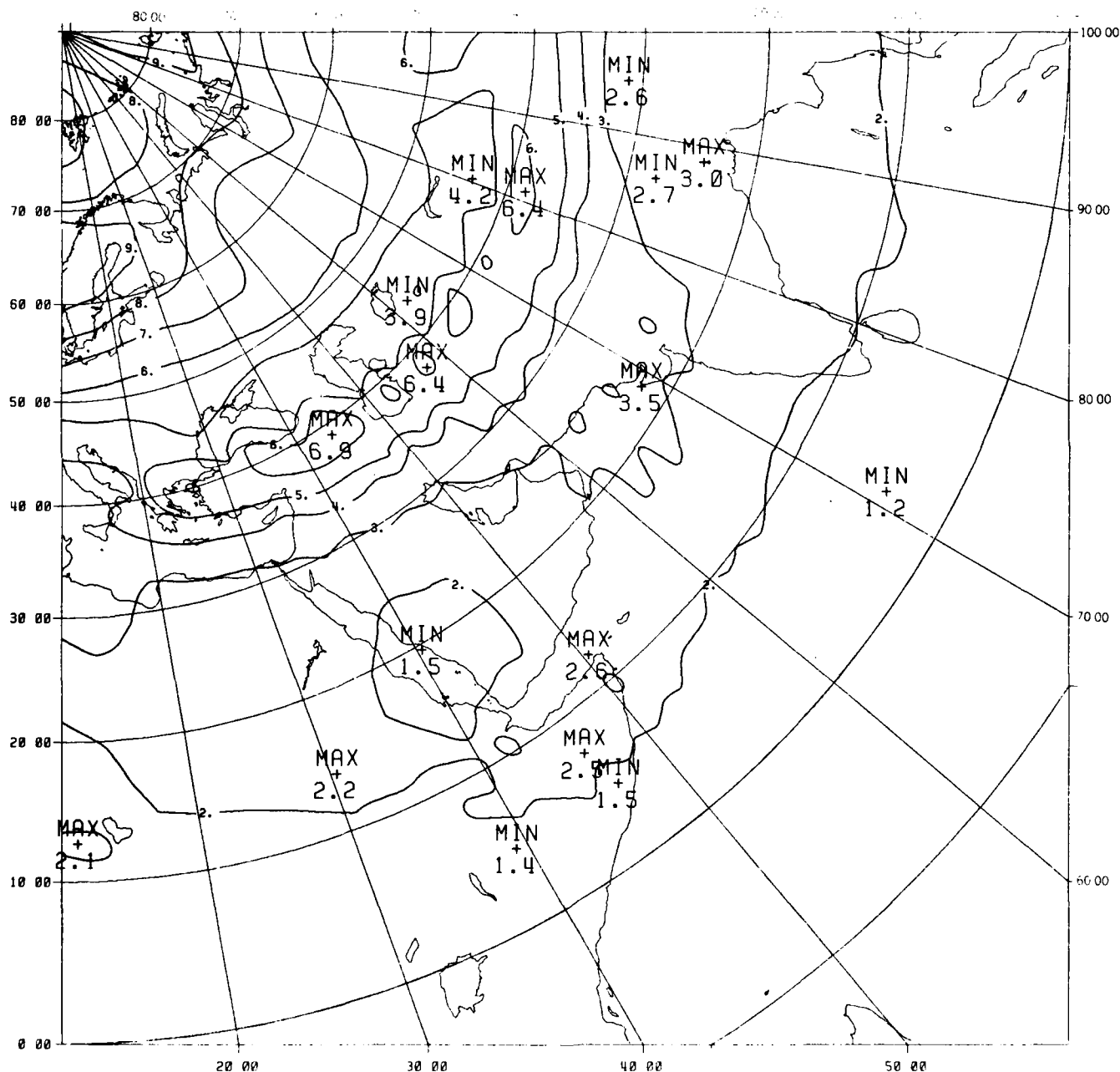


JAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
FIRST QUADRANT

JUNE
MEAN SEA LEVEL
PRESSURE, MILLIBARS

NAV

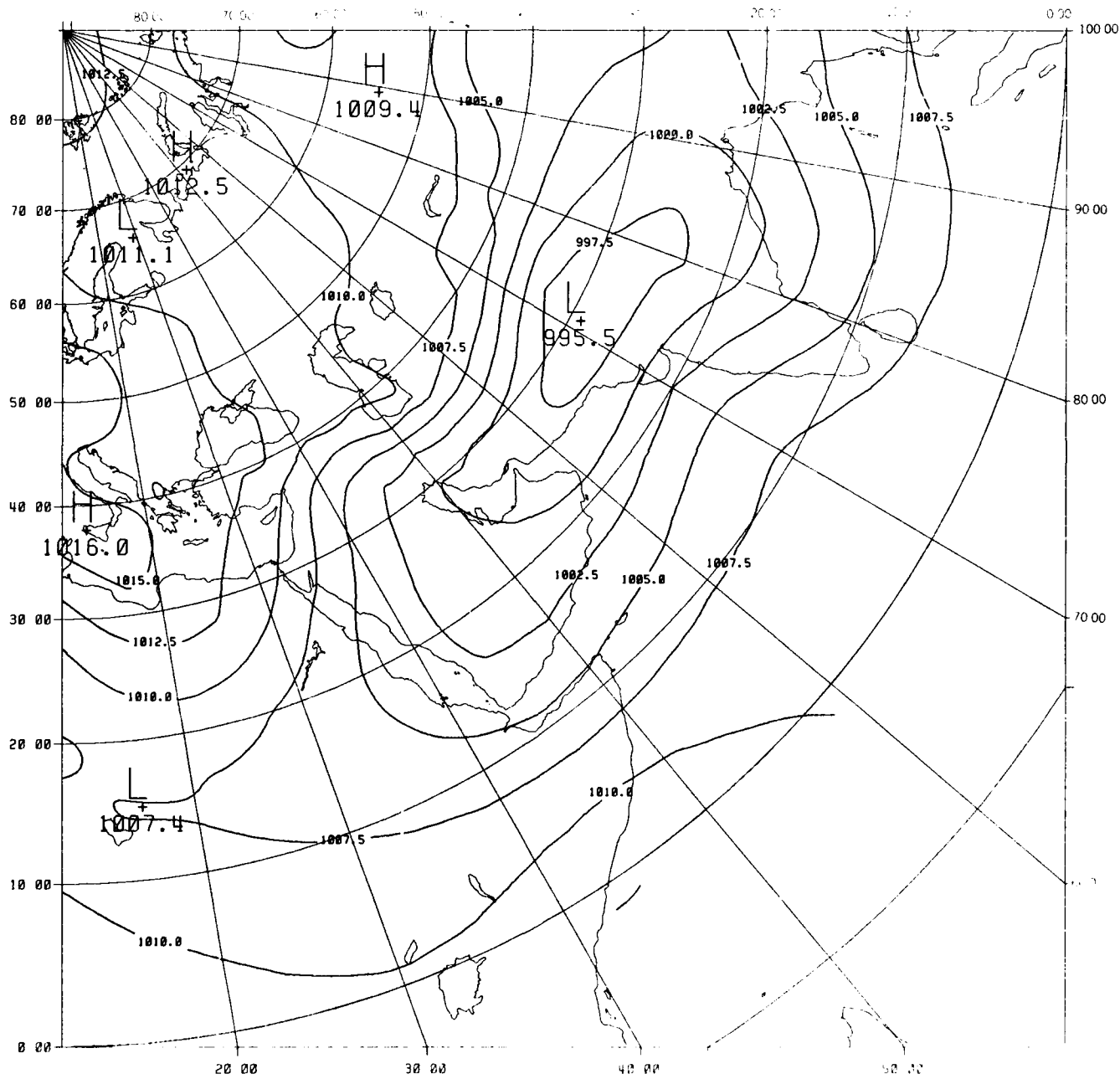
FIGURE A-43



UAPI (POR 1973-1978)
NORTHERN HEMISPHERE
SECOND QUADRANT

JUNE
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

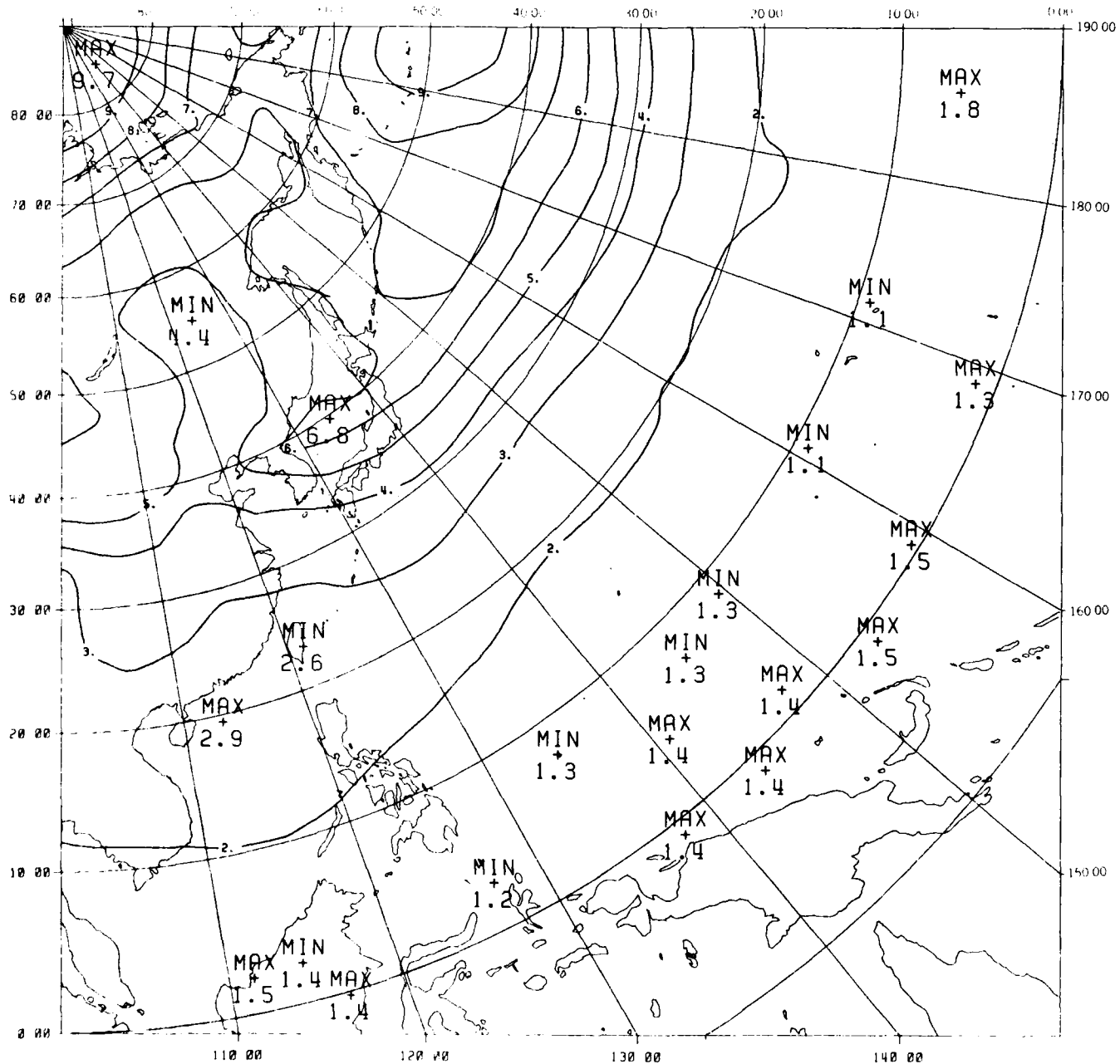
FIGURE A-44



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
SECOND QUADRANT

JUNE
MEETING 1966
1966

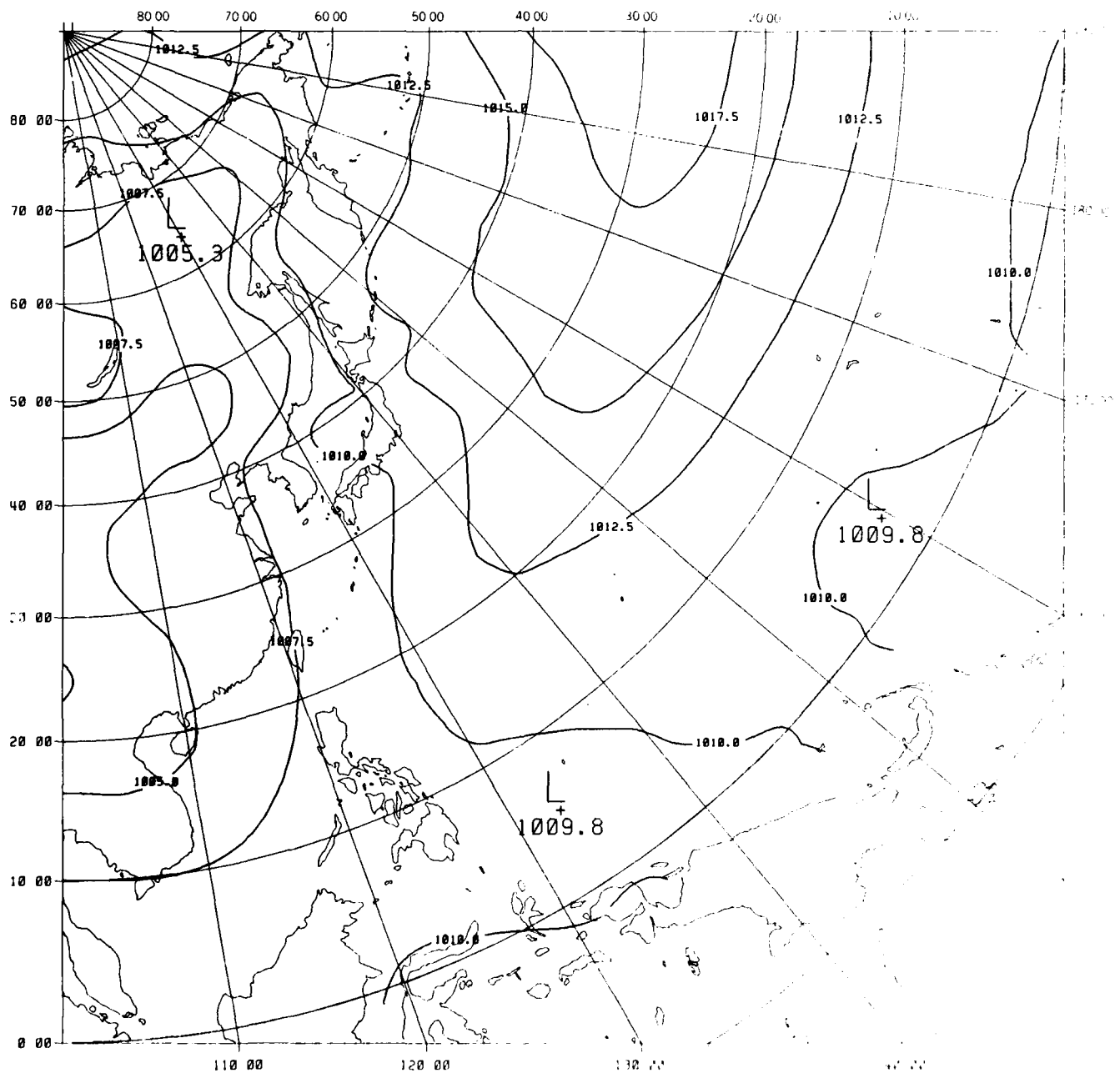
FIGURE A-45



UAPIP (FOR 1973-1978)
NORTHERN HEMISPHERE
THIRD QUADRANT

JUNE
MEAN SEA LEVEL
STEADY OF PRESSURE, MILLIBARS

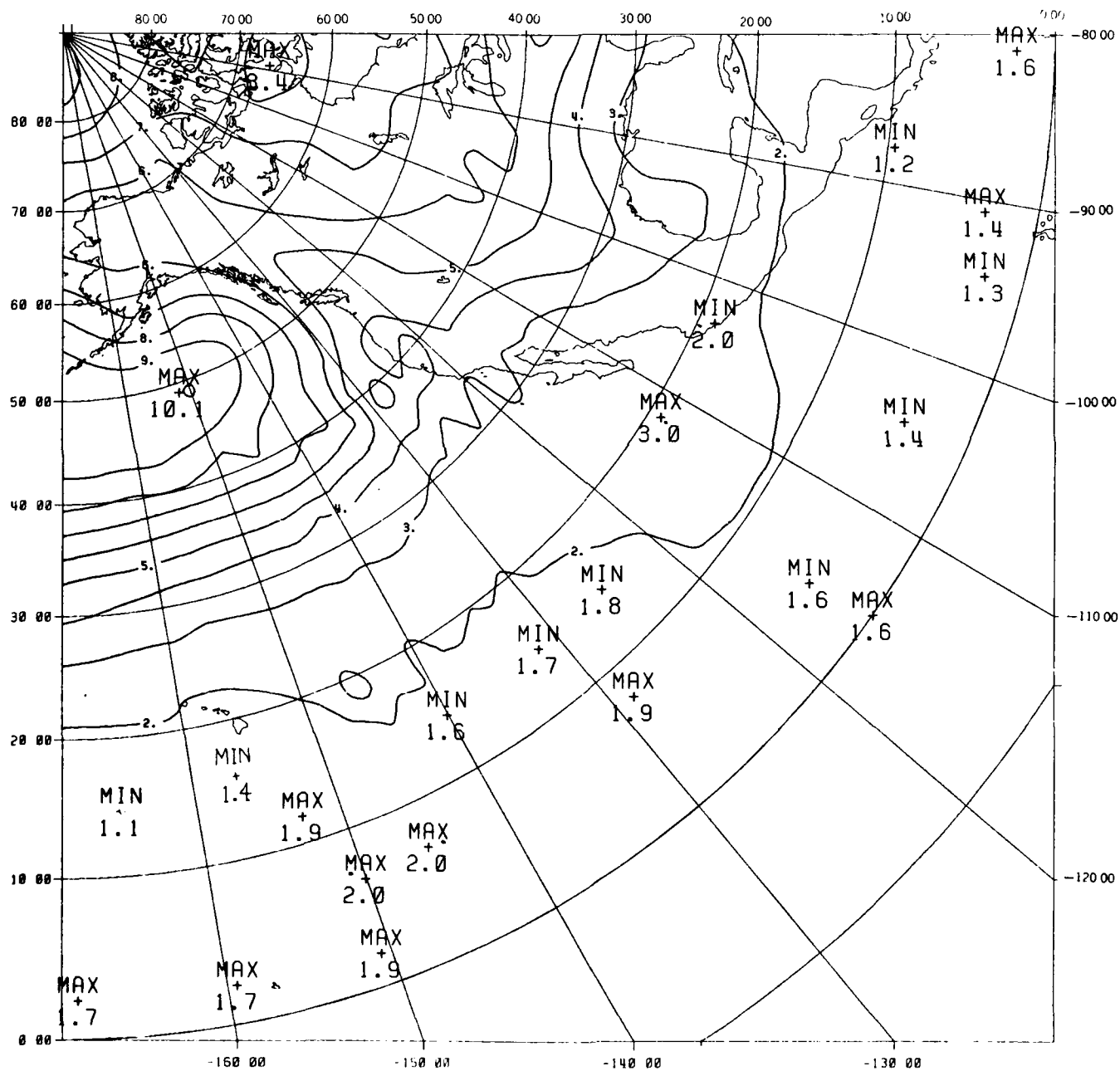
FIGURE A-46



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
THIRD QUADRANT

JUNE
MEAN
PNE
A-47

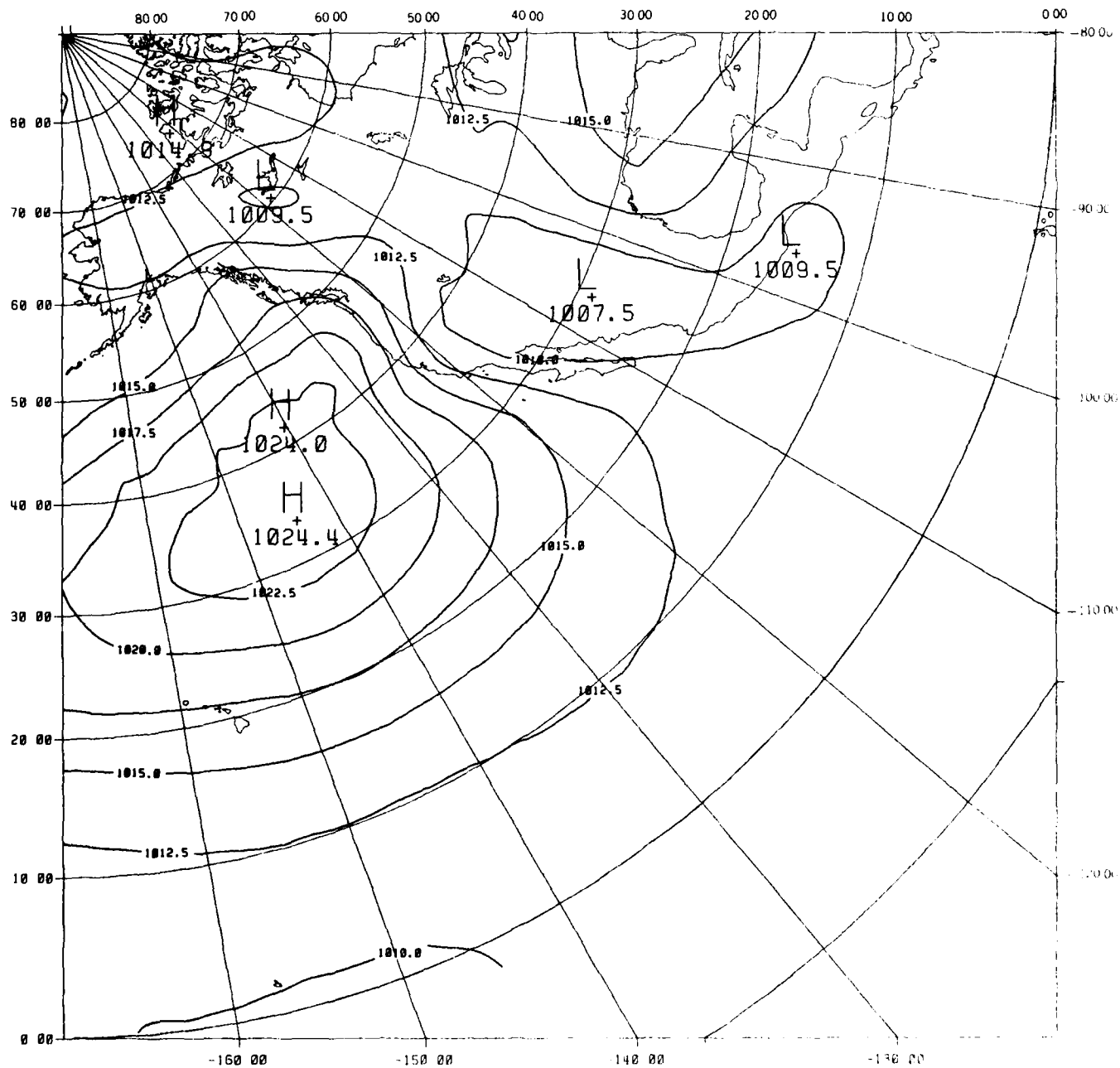
FIGURE A-47



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
FOURTH QUADRANT

JUNE
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

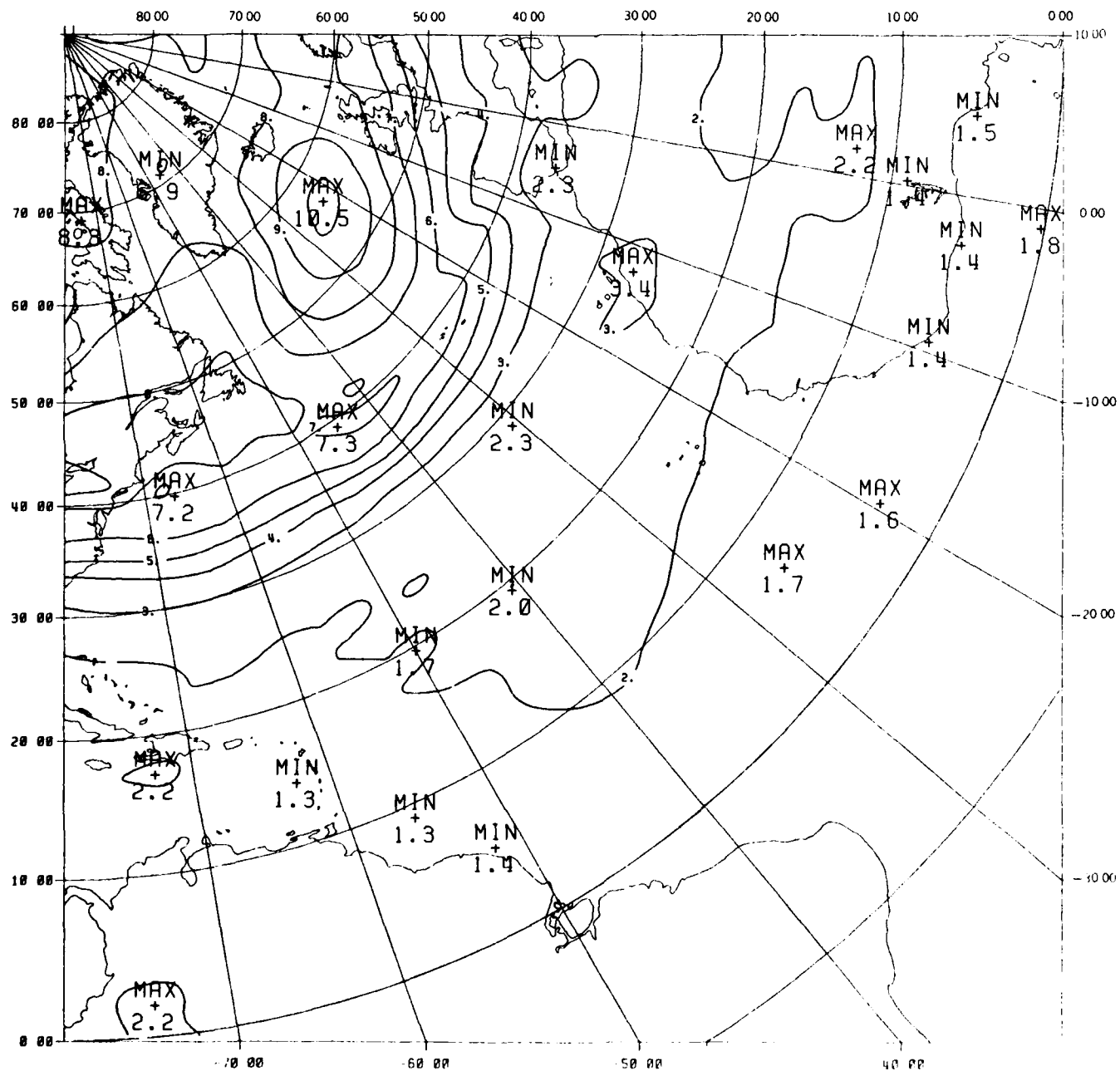
FIGURE A-48



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
FOURTH QUADRANT

JUNE
MEAN SEA LEVEL
PRESSURE, MILLIBARS

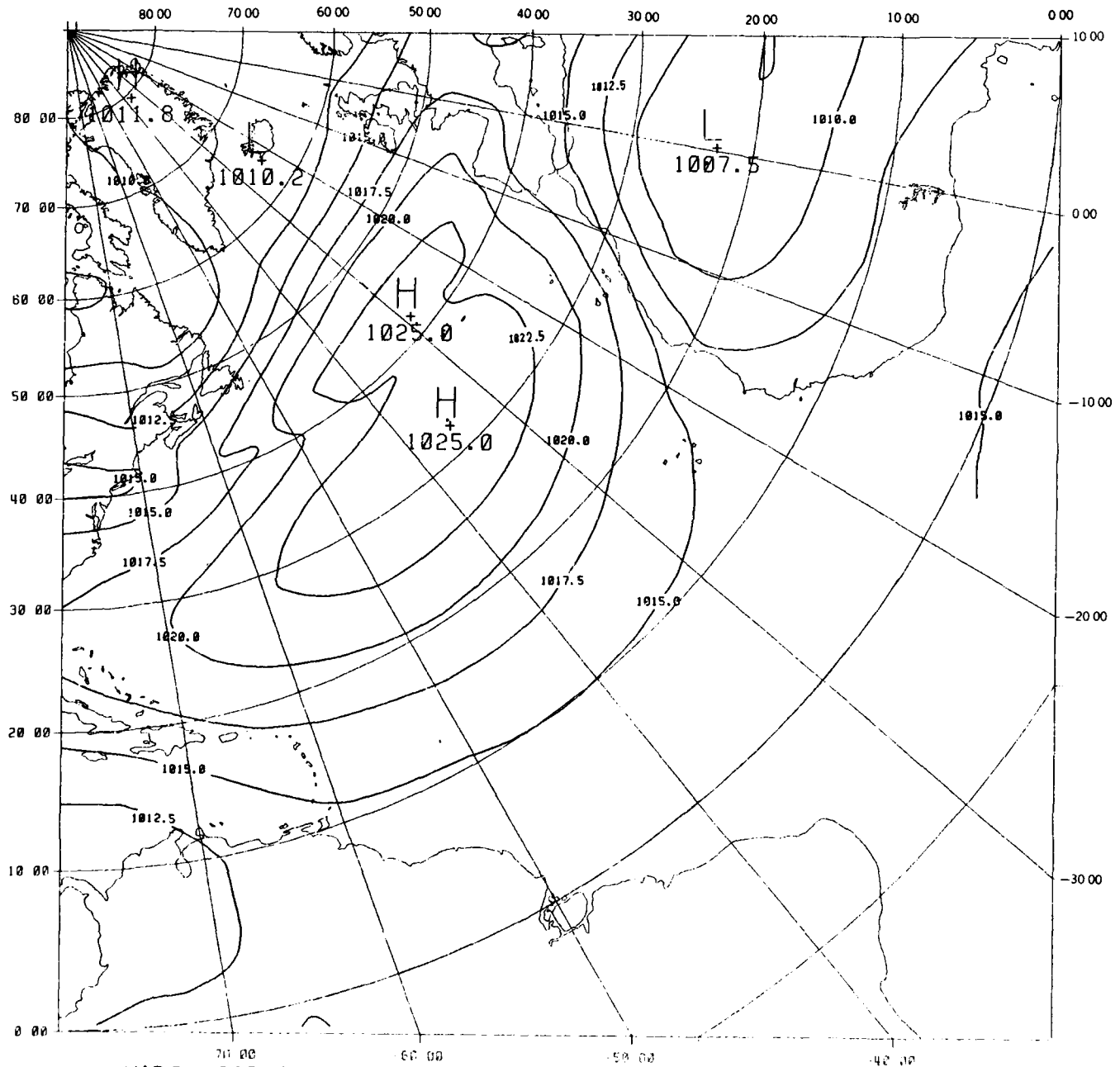
FIGURE A-49



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
FIRST QUADRANT

JULY
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

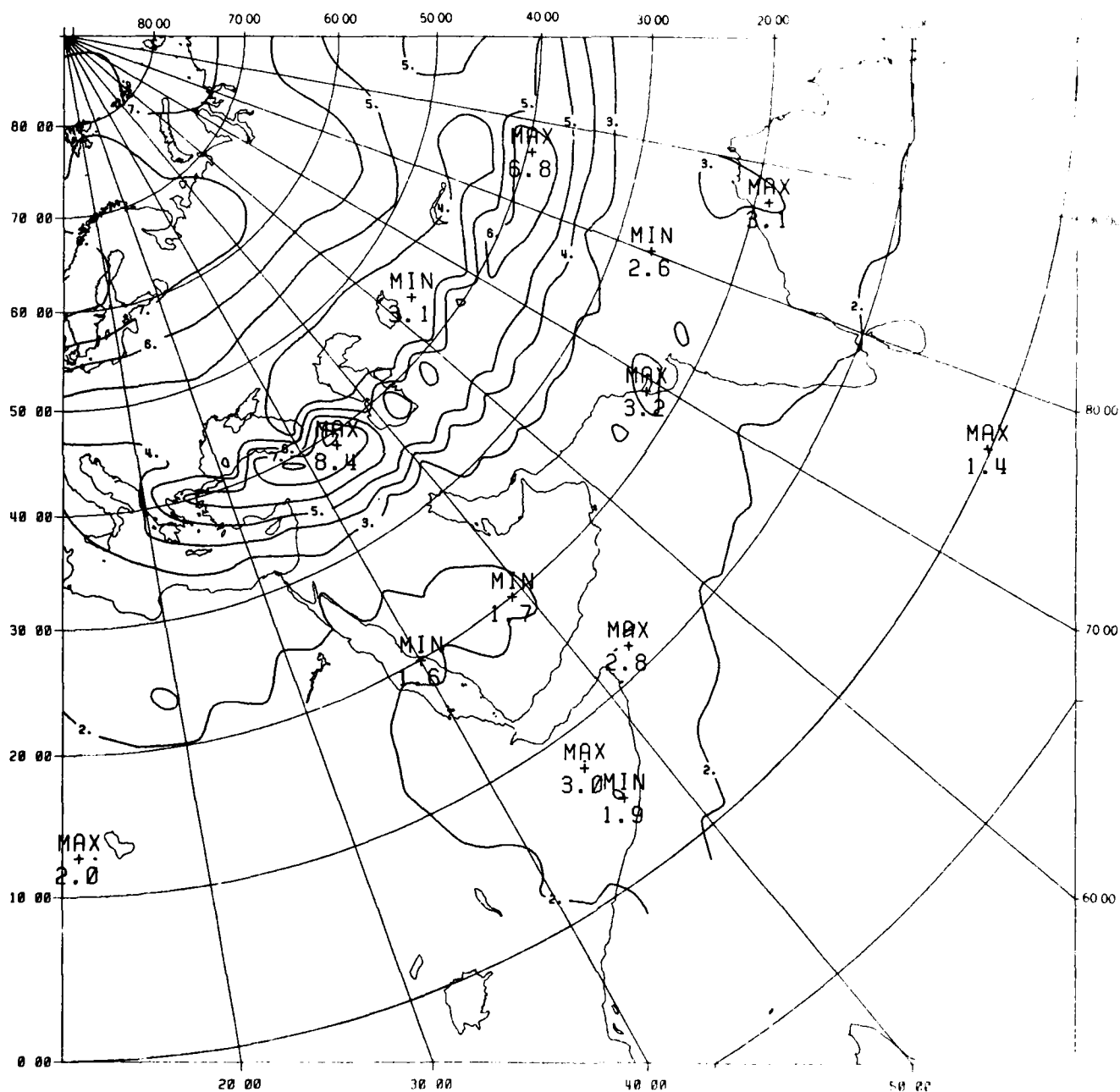
FIGURE A-50



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
FIRST QUANTILE

JULY
MEAN SEA LEVEL
PRESSURE, MILLIBARS

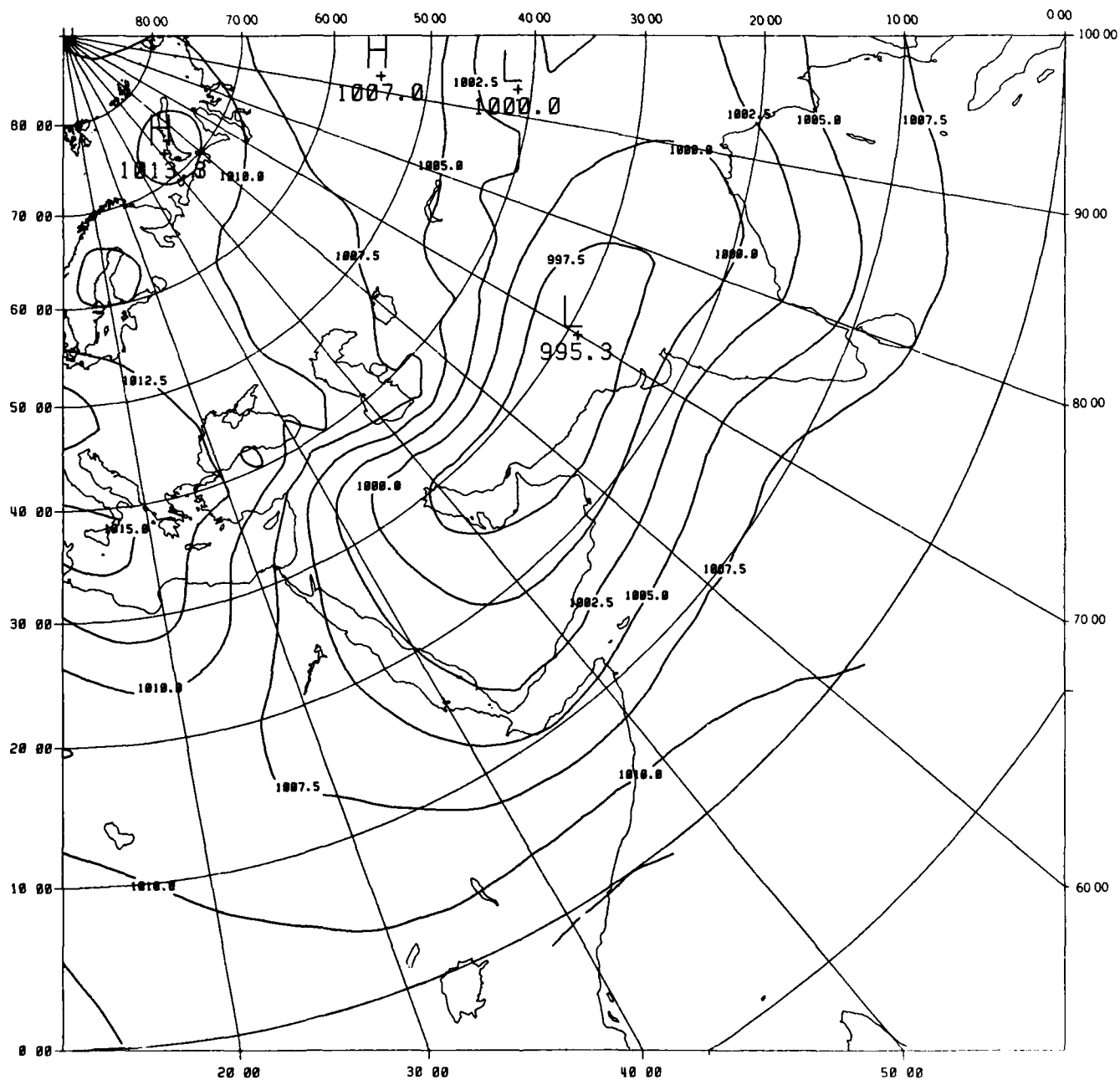
FIGURE A-74



UAPIP (POR 1973 1978)
NORTHERN HEMISPHERE
SECOND QUADRANT

JULY
MEAN SEA LEVEL
STDEV OF PRESSURE, METER

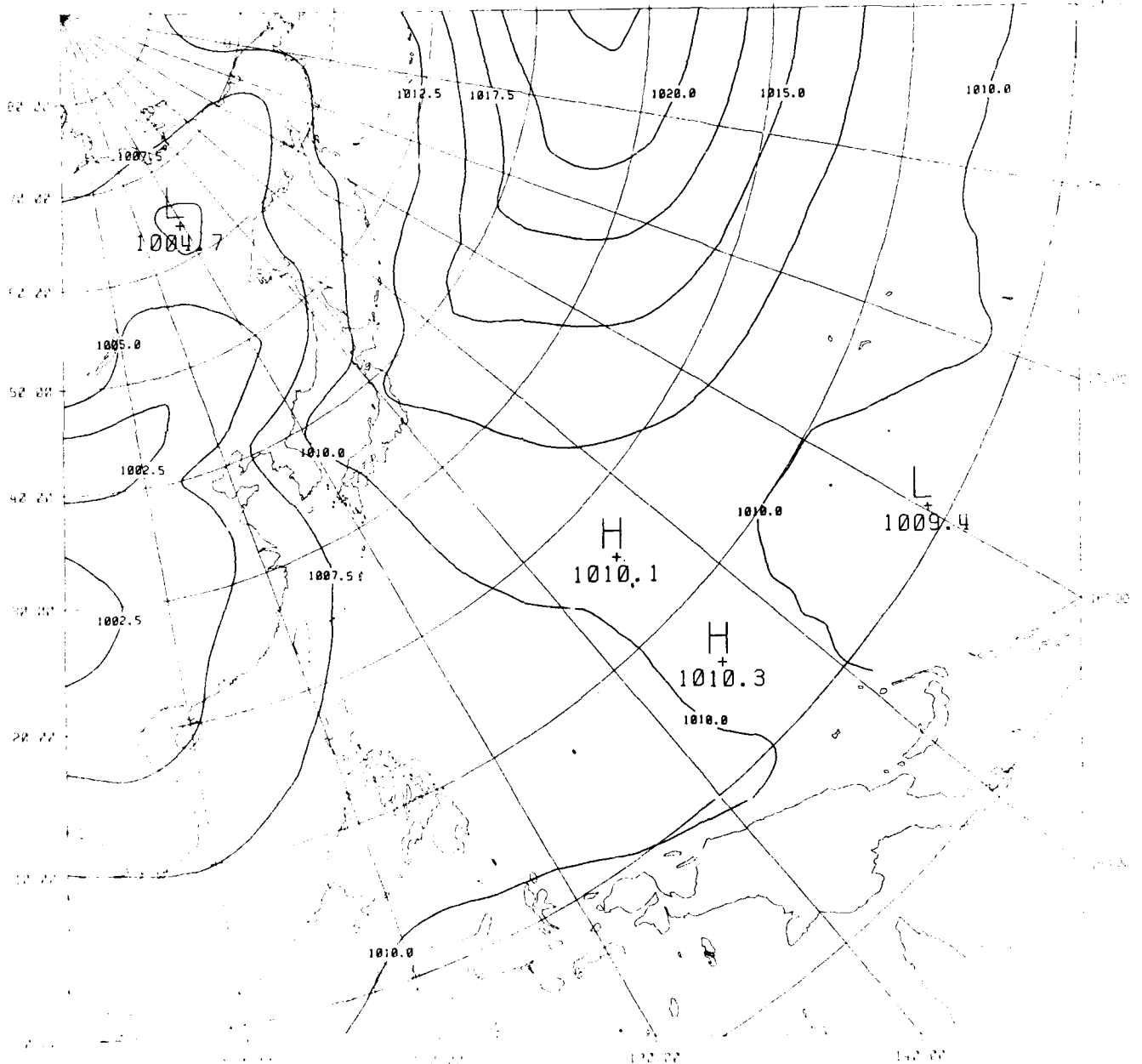
FIGURE A-52



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
SECOND QUADRANT

JULY
MEAN SEA LEVEL
PRESSURE, MILLIBARS

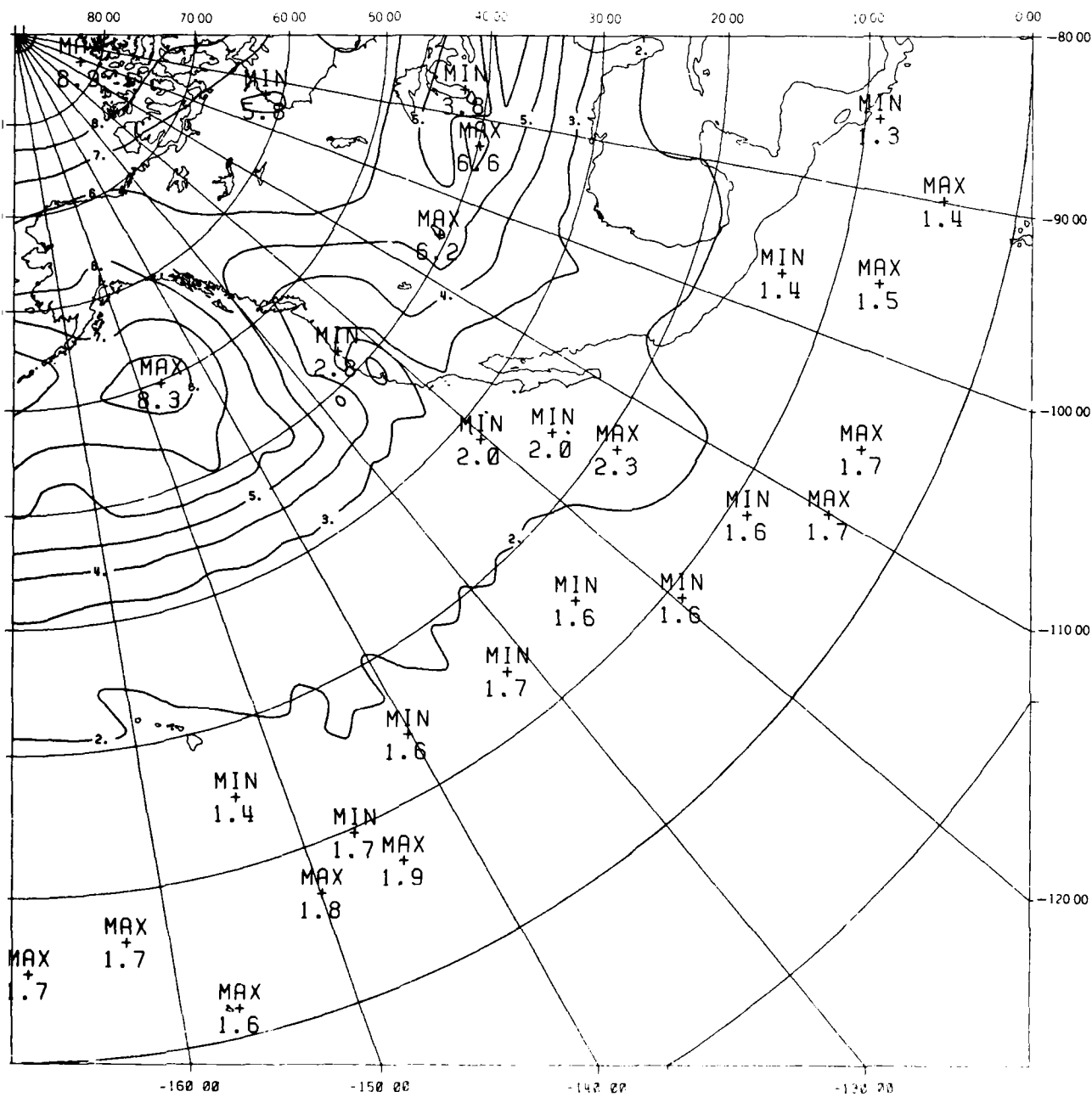
FIGURE A-54



Aug. 1977 (1978)

MEAN SEA LEVEL
PRESSURE, MILLIBARS

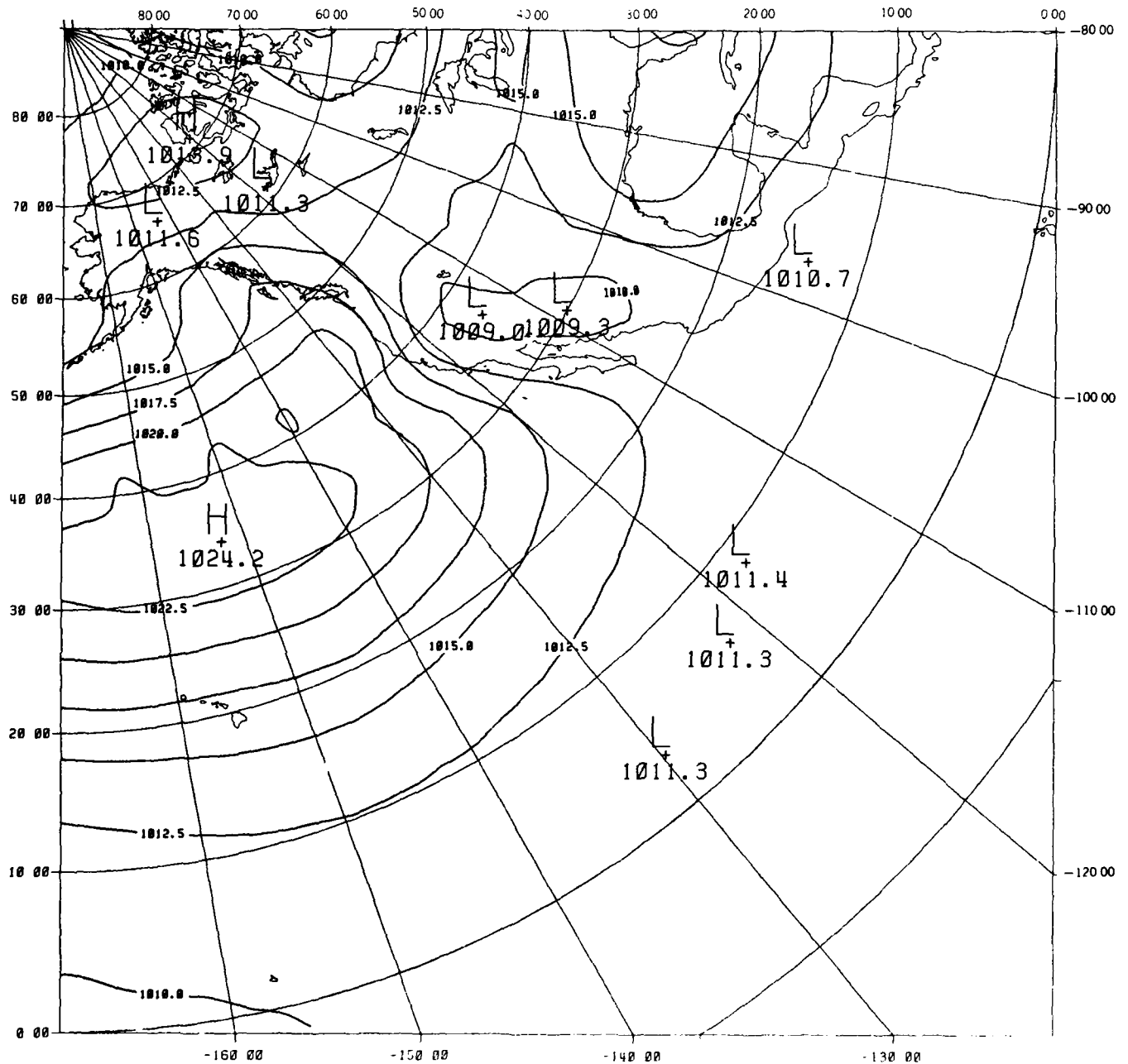
FIGURE A-55



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
FOURTH QUADRANT

JULY
MEAN SEA LEVEL
SIDE OF PRESSURE, MILLIBARS

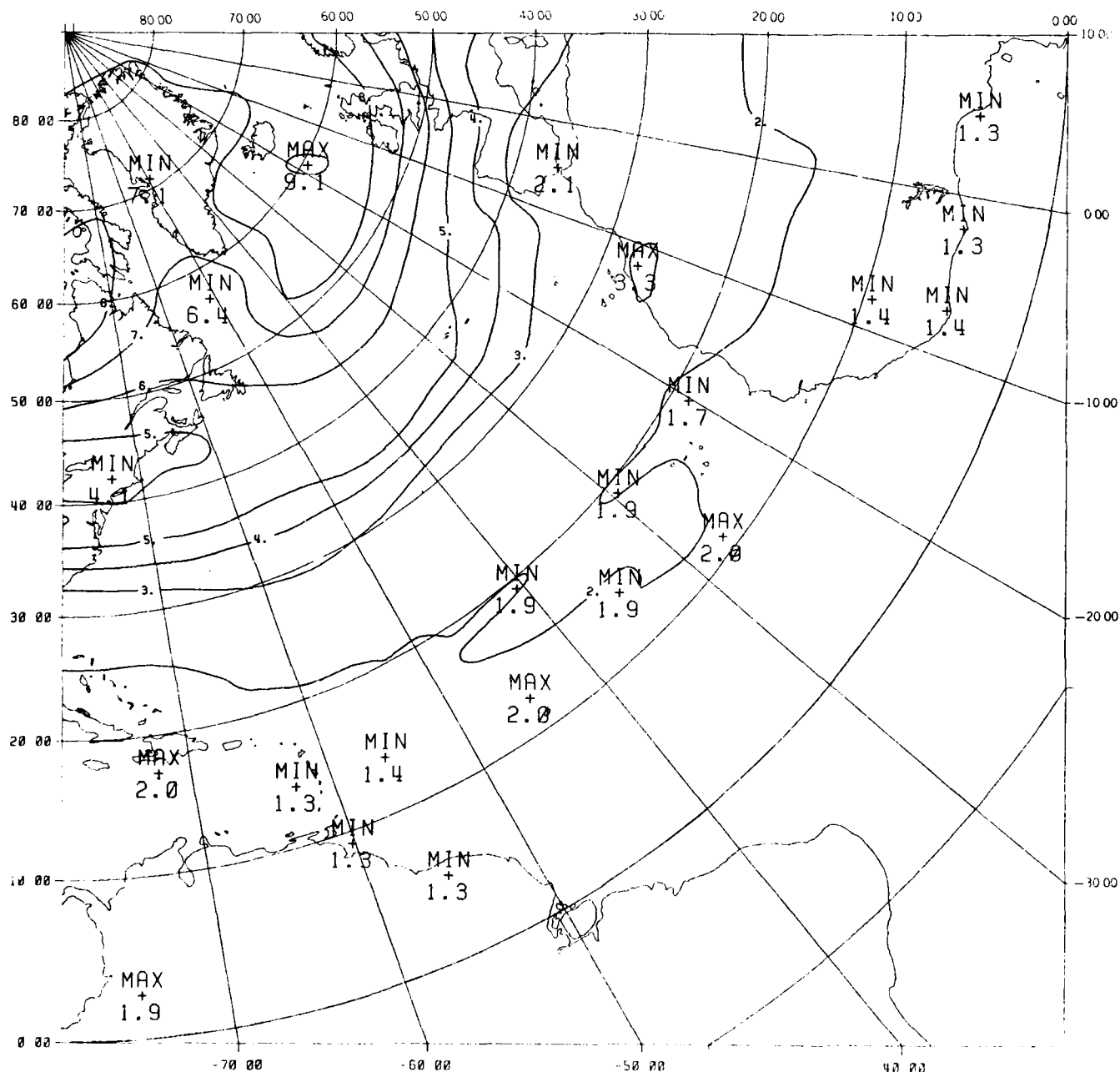
FIGURE A-56



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
FOURTH QUADRANT

JULY
MEAN SEA LEVEL
PRESSURE, MILLIBARS

FIGURE A-57

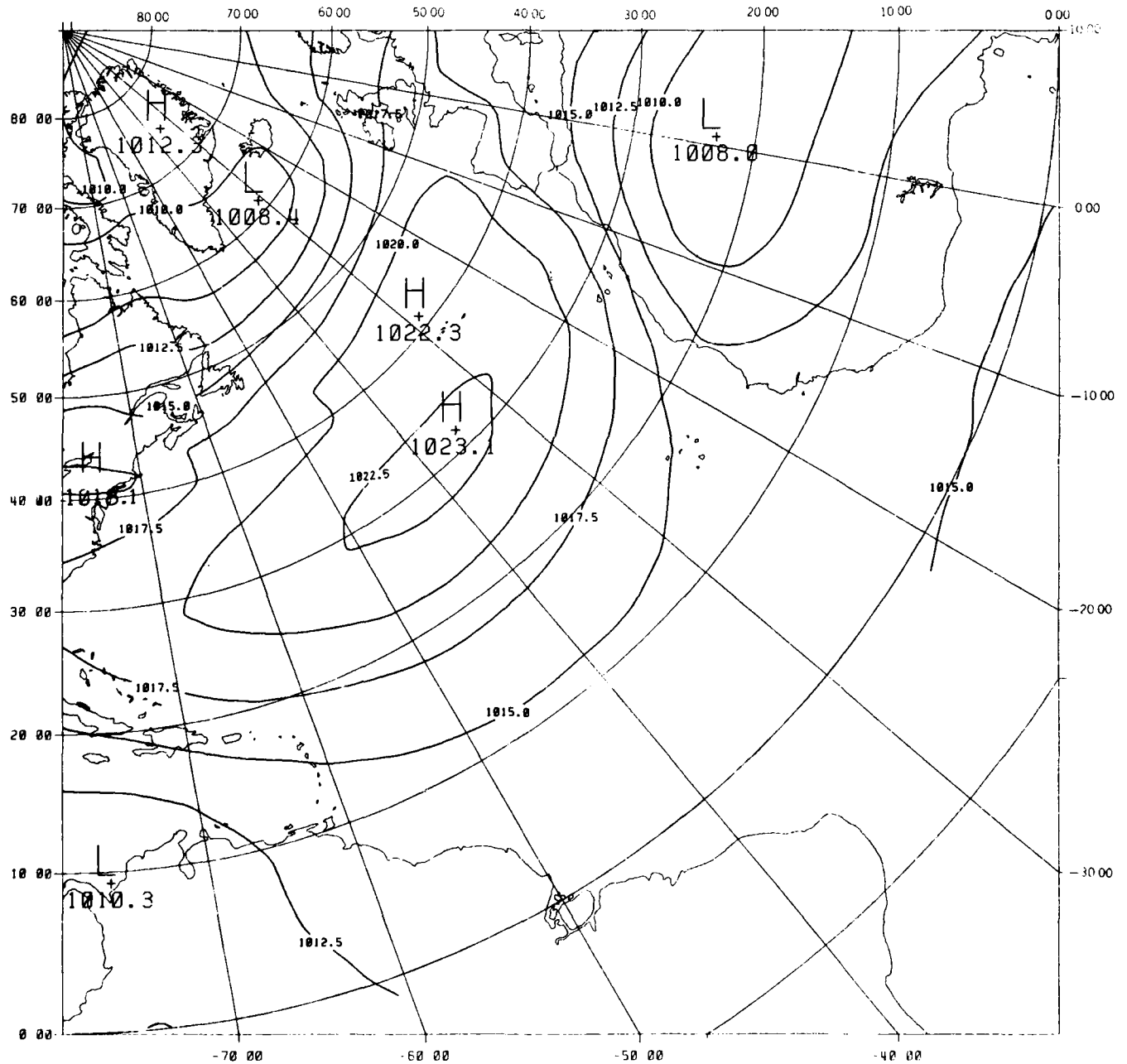


UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
FIRST QUADRANT

AUGUST
MEAN SEA LEVEL
STRESS OF PRESSURE, MILLIONS

A-58

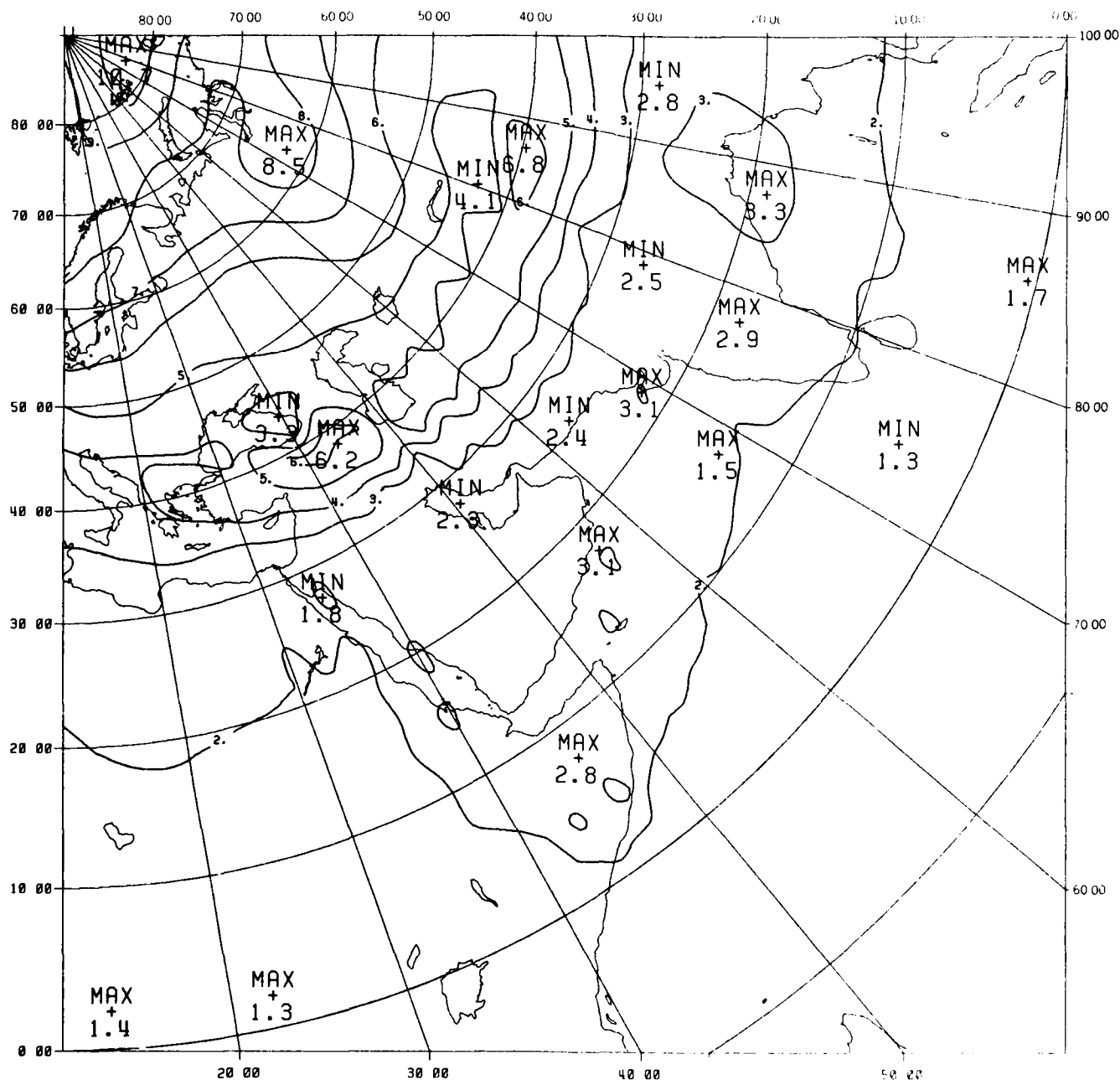
FIGURE A-58



UAIIP (POR 1973-1978)
NORTHERN HEMISPHERE
FIRST QUADRANT

AUGUST
MEAN SEA LEVEL
PRESSURE, MILLIBARS

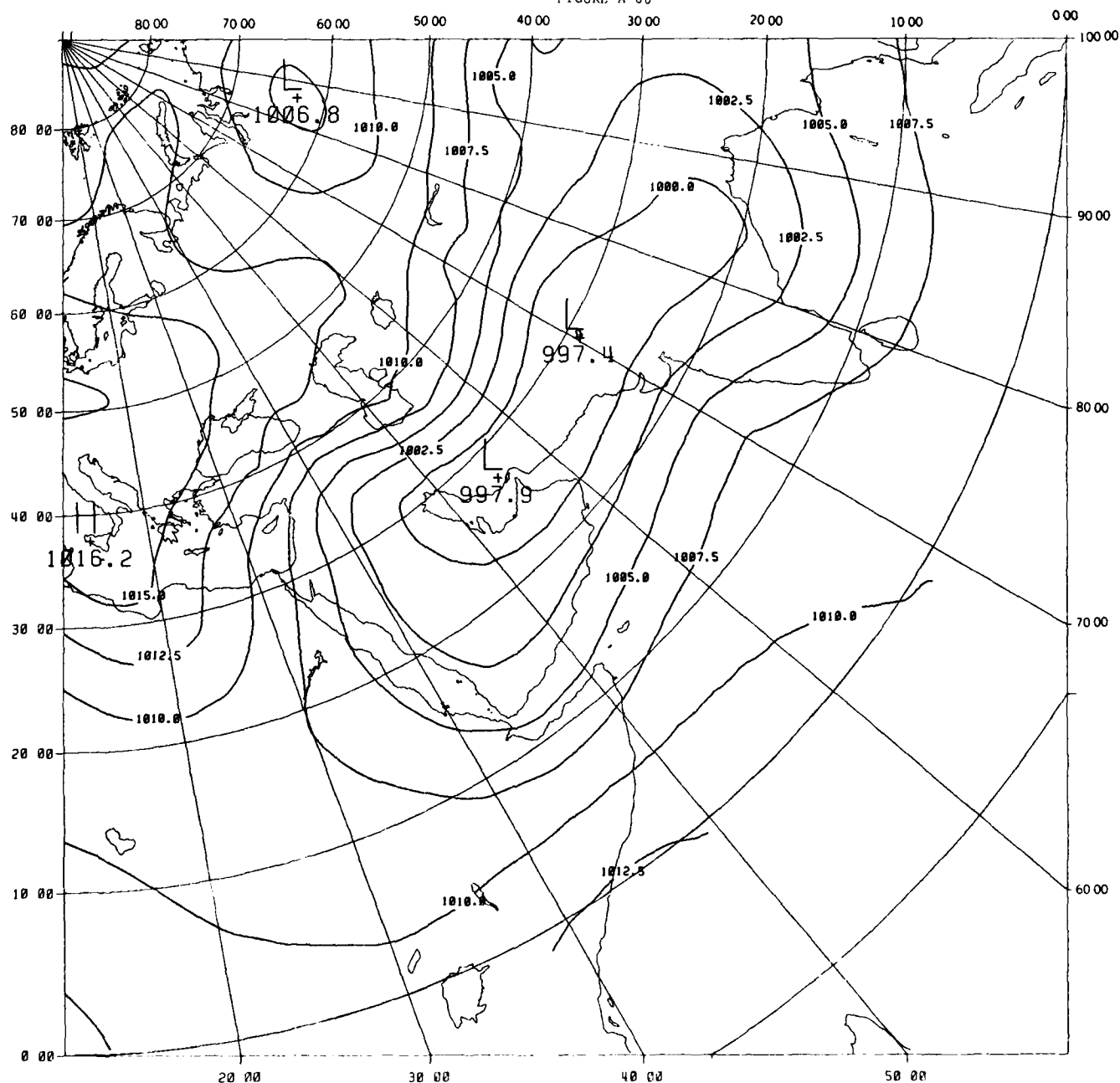
FIGURE A-59



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
SECOND QUADRANT

AUGUST
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

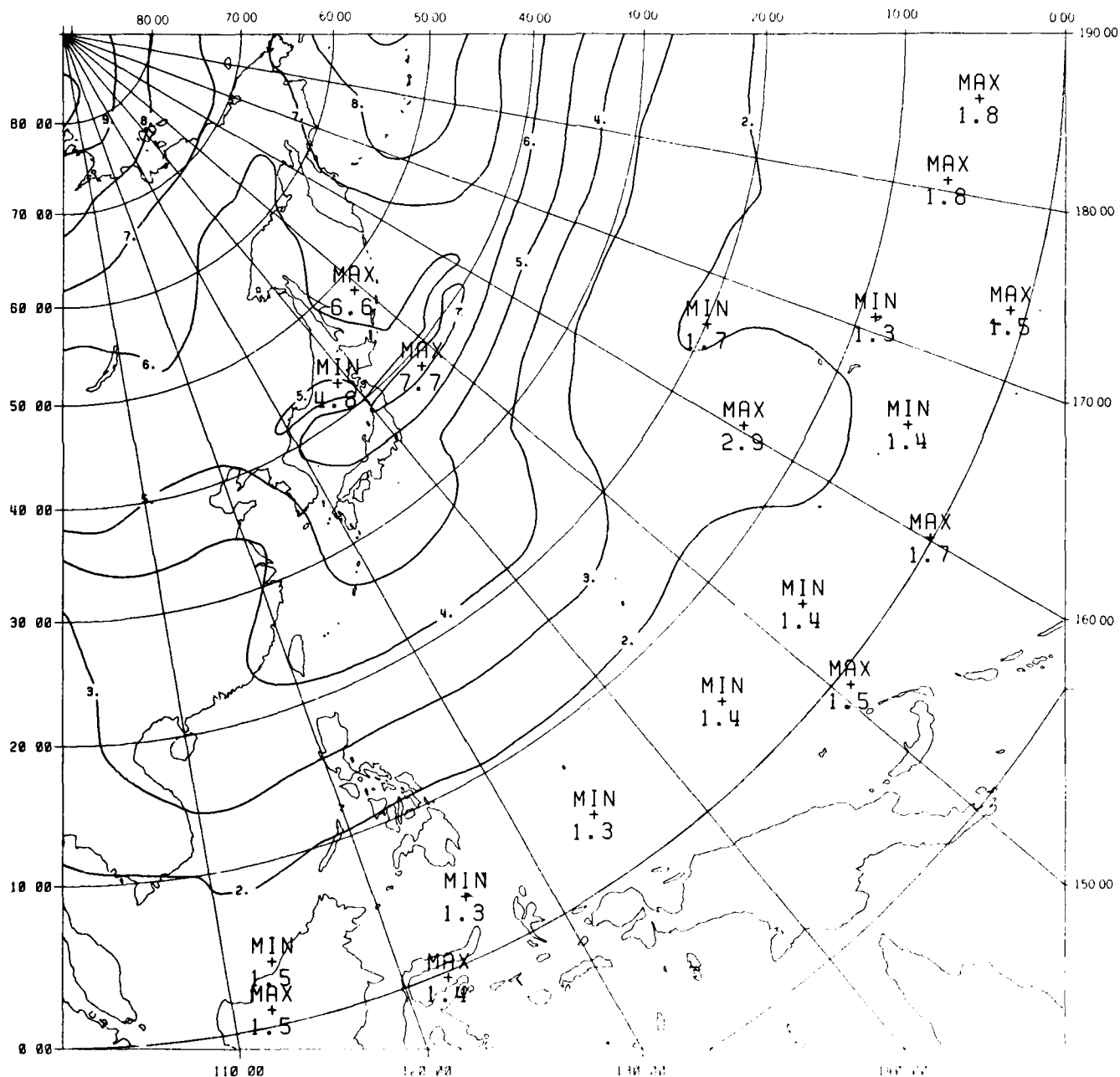
FIGURE A-60



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
SECOND QUADRANT

AUGUST
MEAN SEA LEVEL
PRESSURE, MILLIBARS

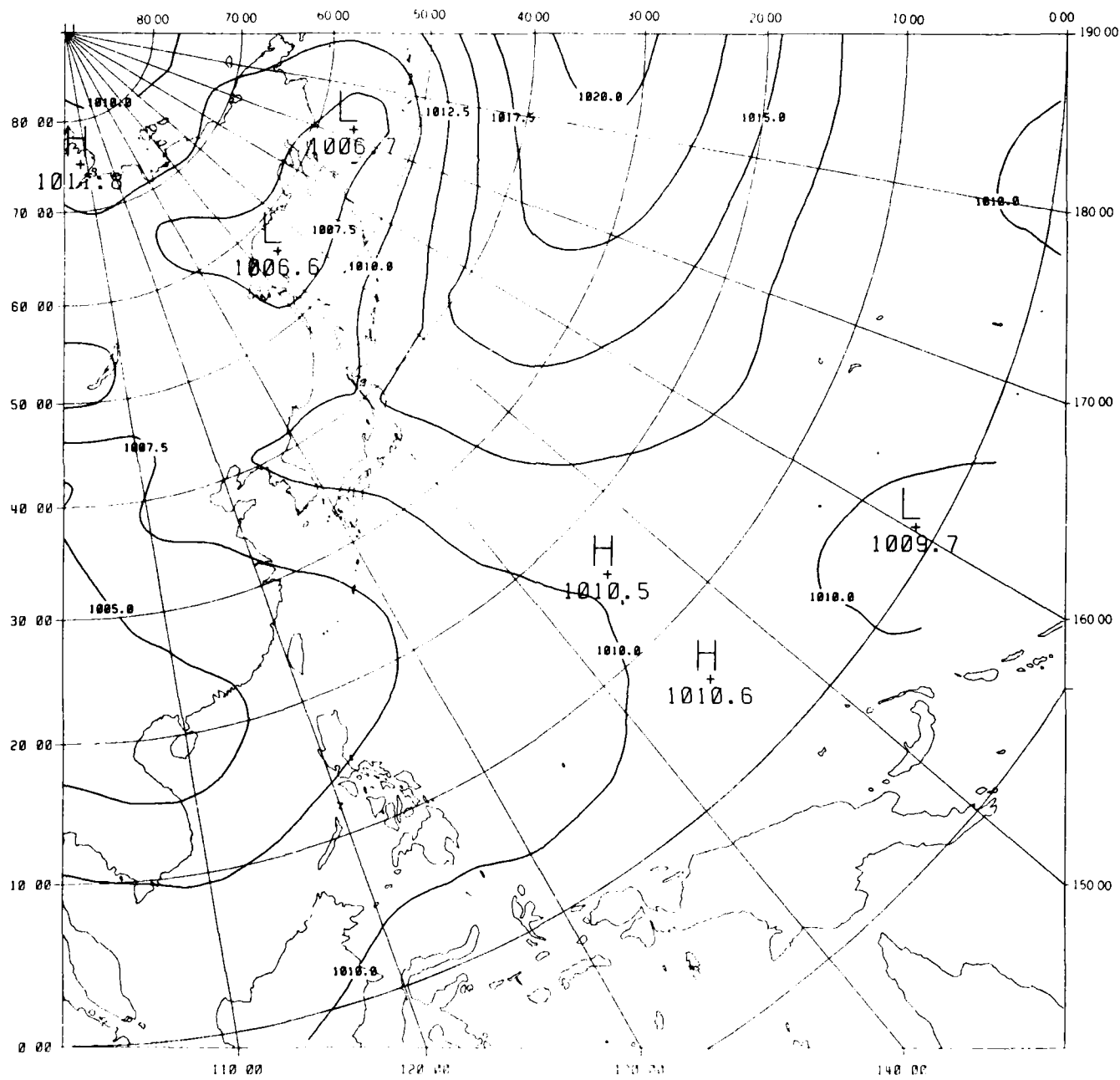
FIGURE A-61



UAFIP (POR 1973-1978)
NORTHERN HEMISPHERE
THIRD QUADRANT

FIGURE A-62
MEAN ...
SIDE ...

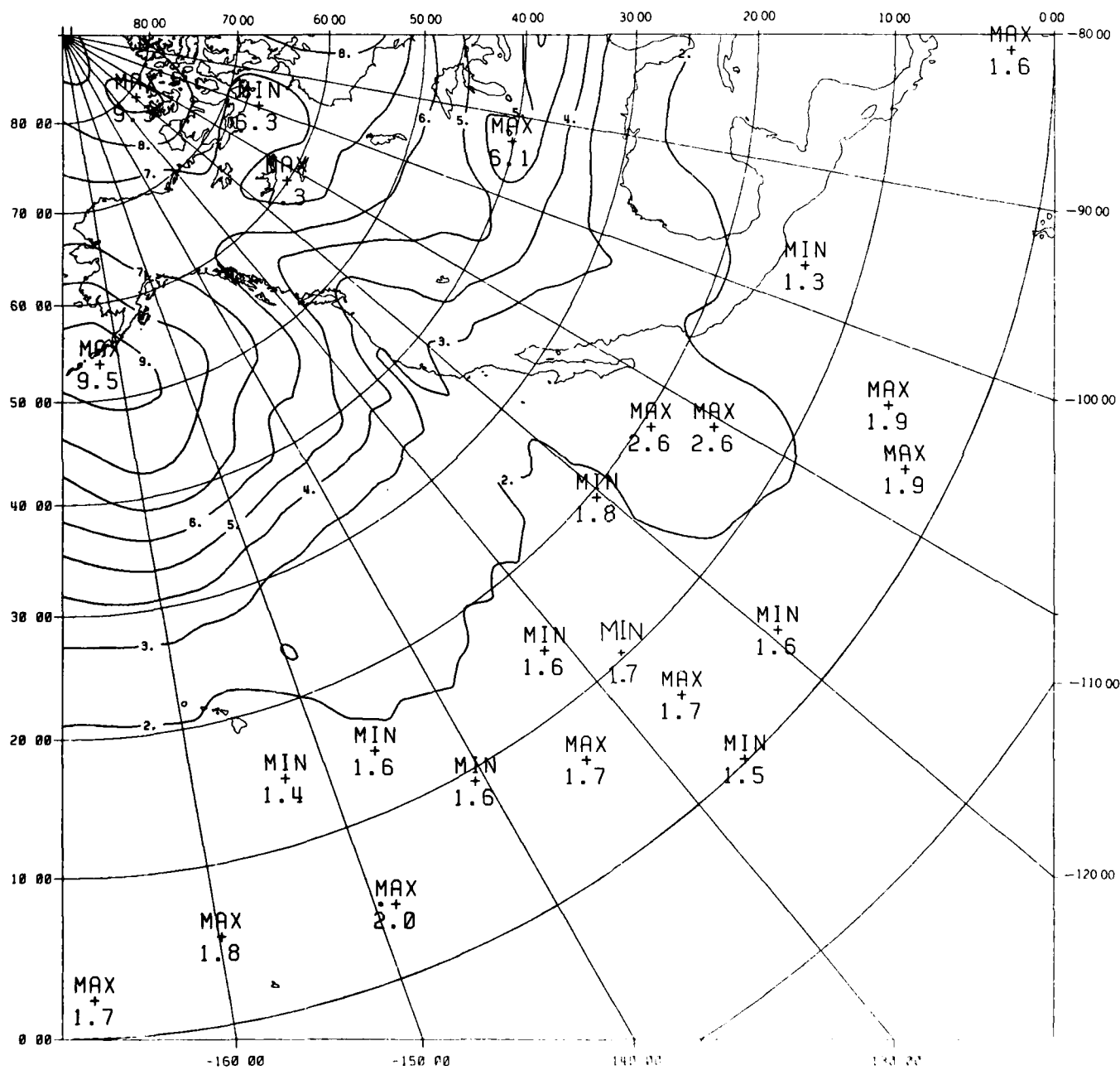
FIGURE A-62



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
THIRD QUADRANT

MEAN SEA LEVEL
PRESSURE, MILLIBARS

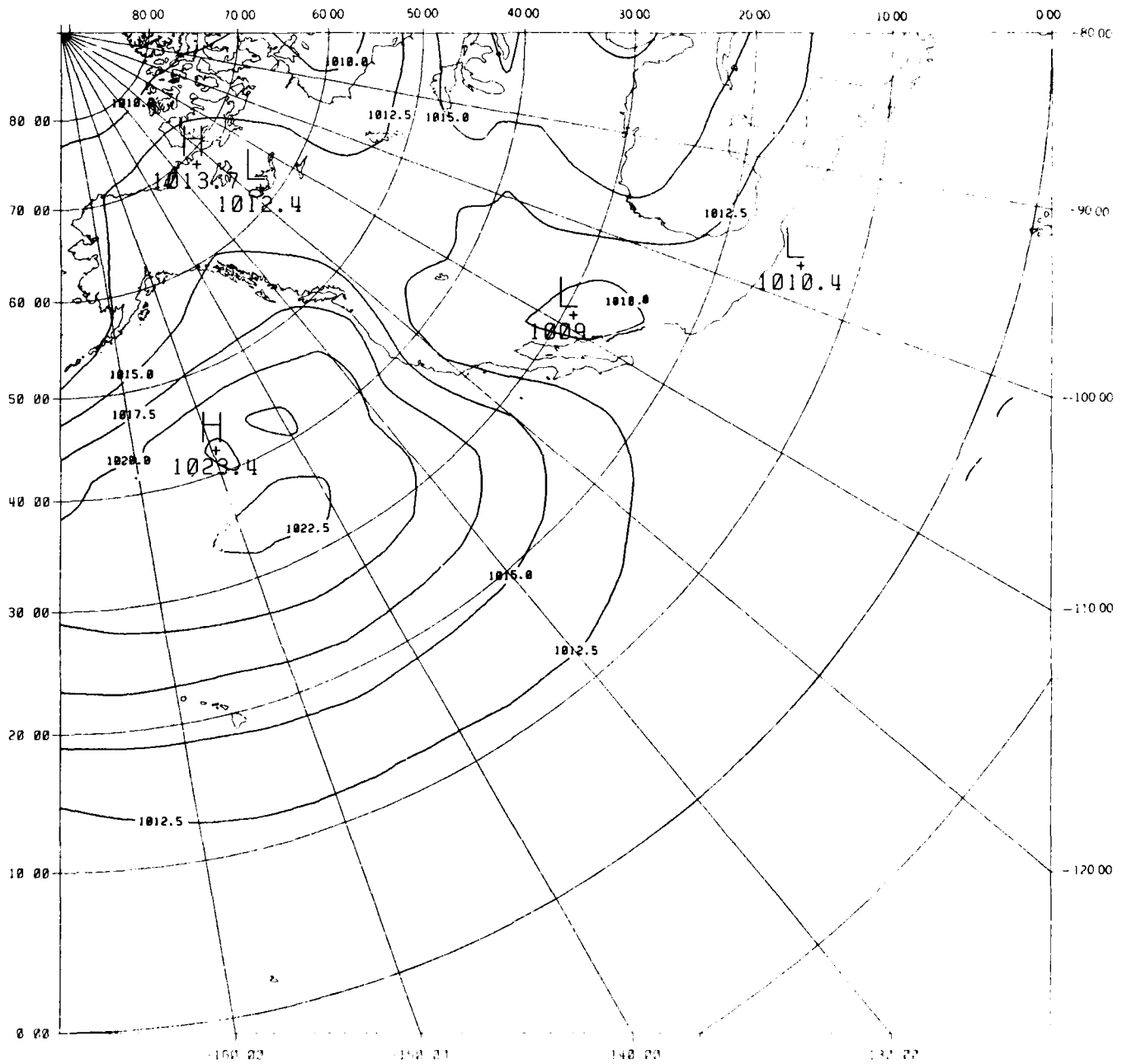
FIGURE A-63



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
FOURTH QUADRANT

AUGUST
MEAN SEA LEVEL
STDEV OF SEA LEVEL

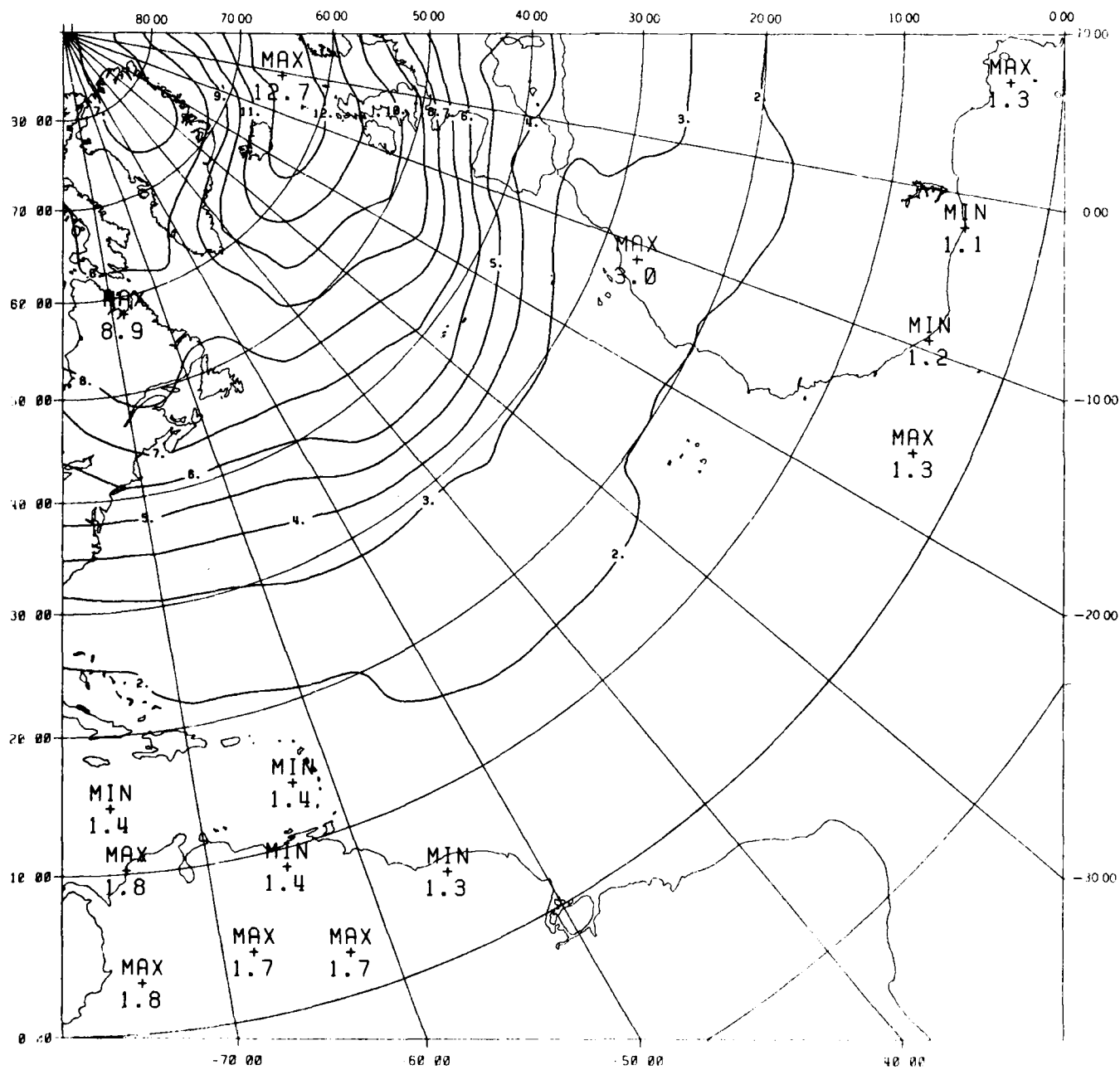
FIGURE A-64



UAPIP (POR 1973 1978)
NORTH PACIFIC MEAN SEA LEVEL
FOURTH QUANTILE

ALCUSE
MEAN SEA LEVEL
FIFTH QUANTILE

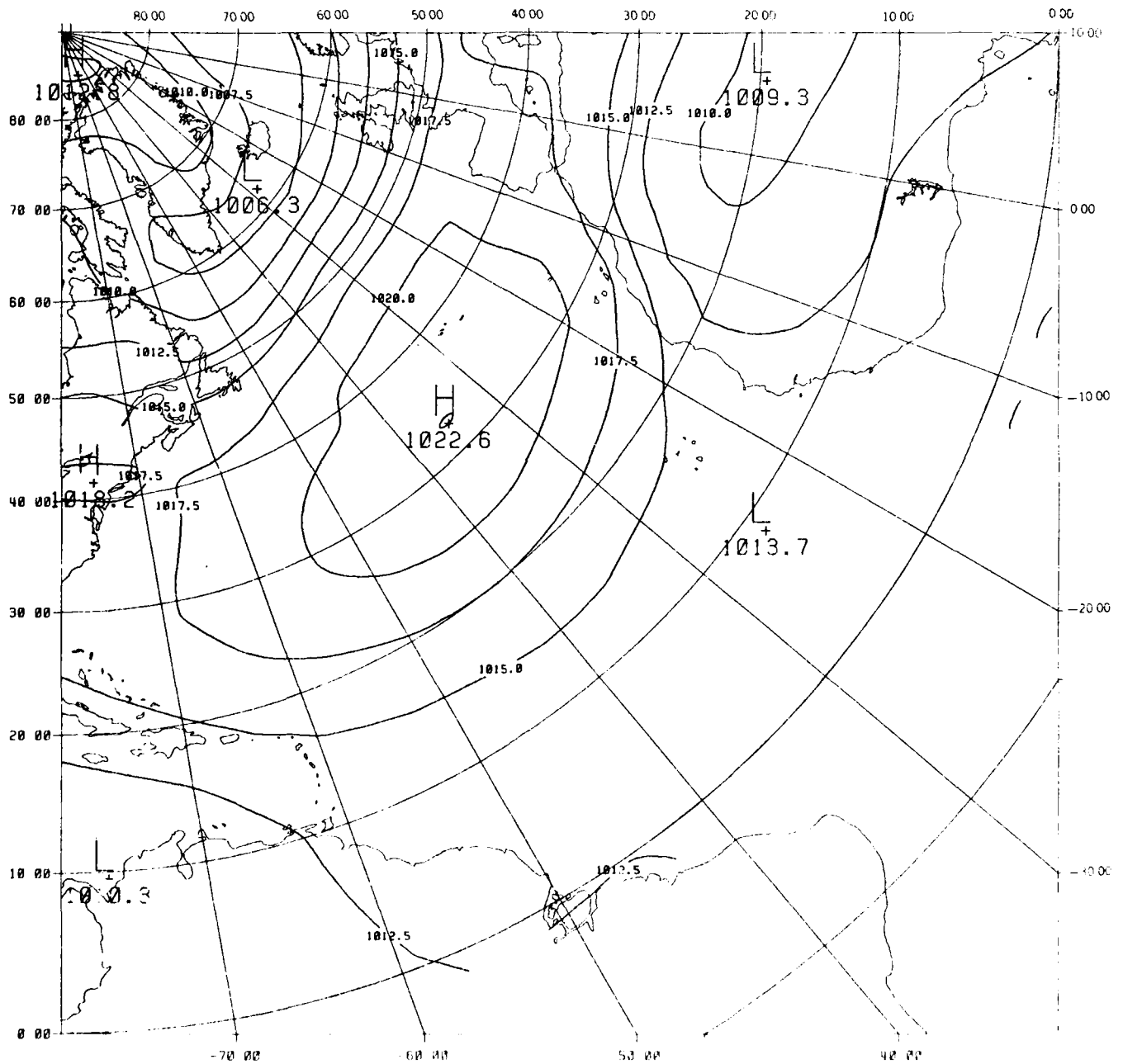
FIGURE A-65



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
FIRST QUADRANT

SEPTEMBER
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

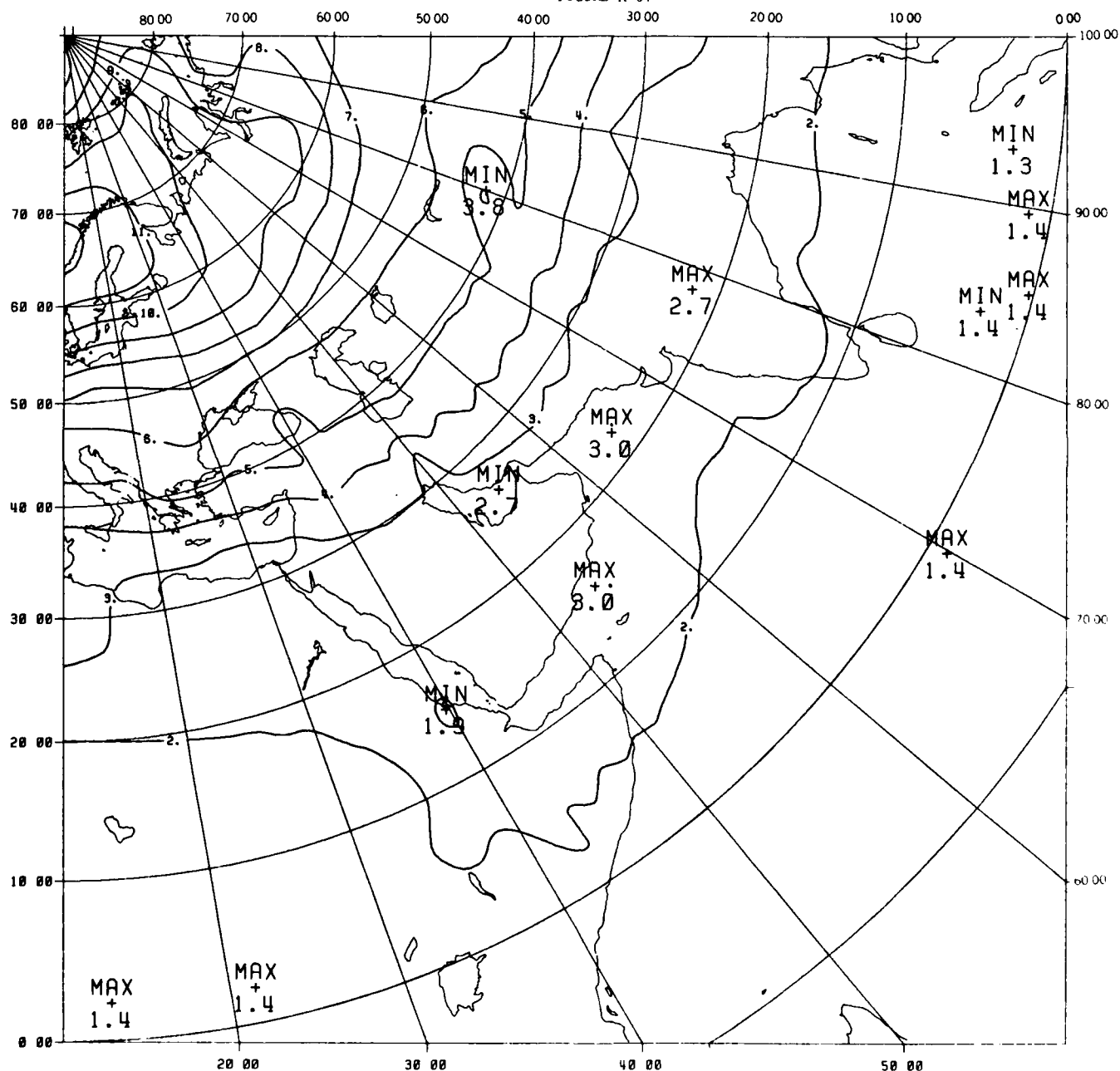
FIGURE A-66



NAIP (POC 1973-1978)
NORTHERN HEMISPHERE
FIRST QUADRANT

SEPTEMBER
MEAN SEA LEVEL
PRESSURE, MILLIBARS

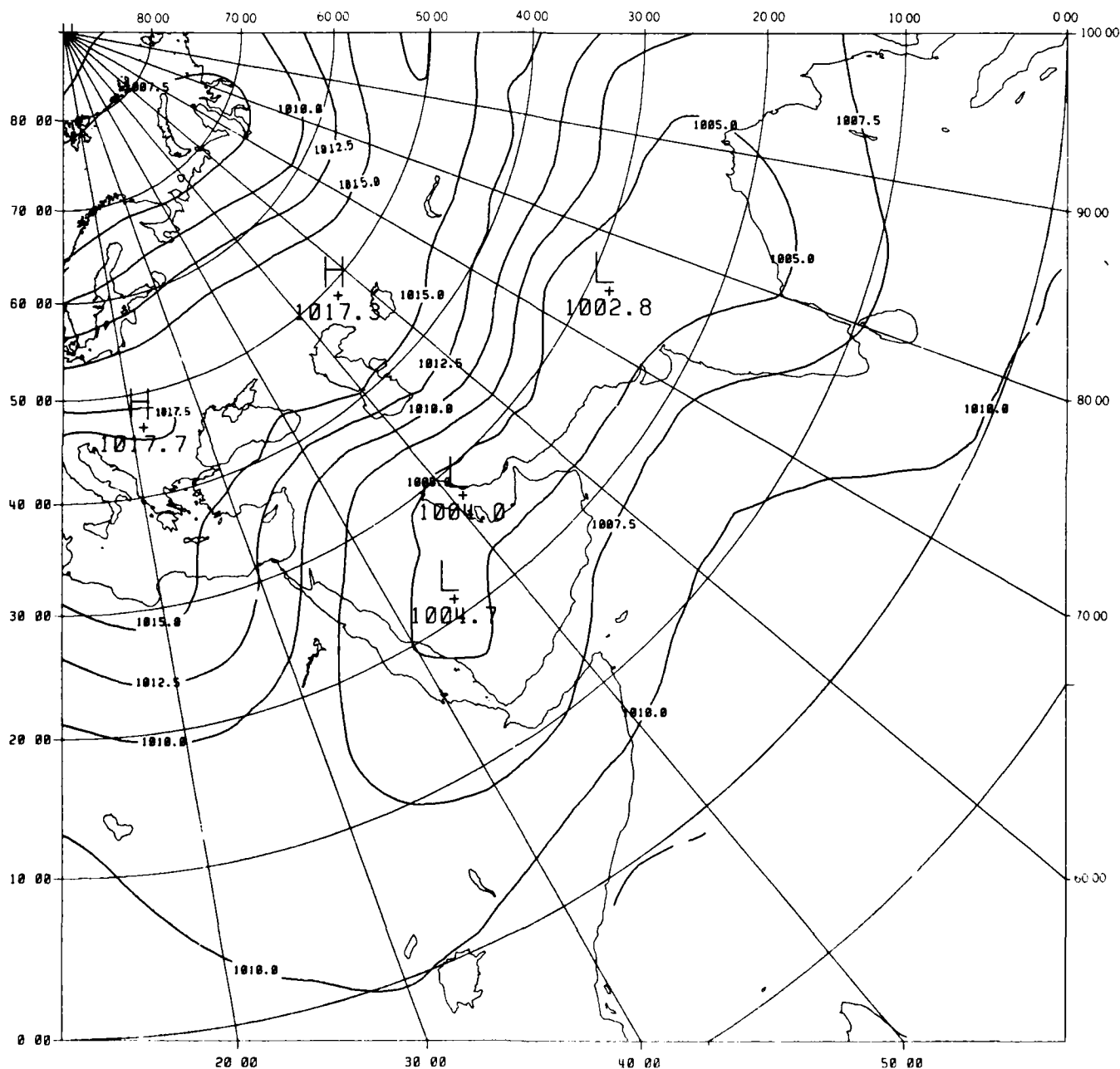
FIGURE A-67



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
SECOND QUADRANT

SEPTMBER
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

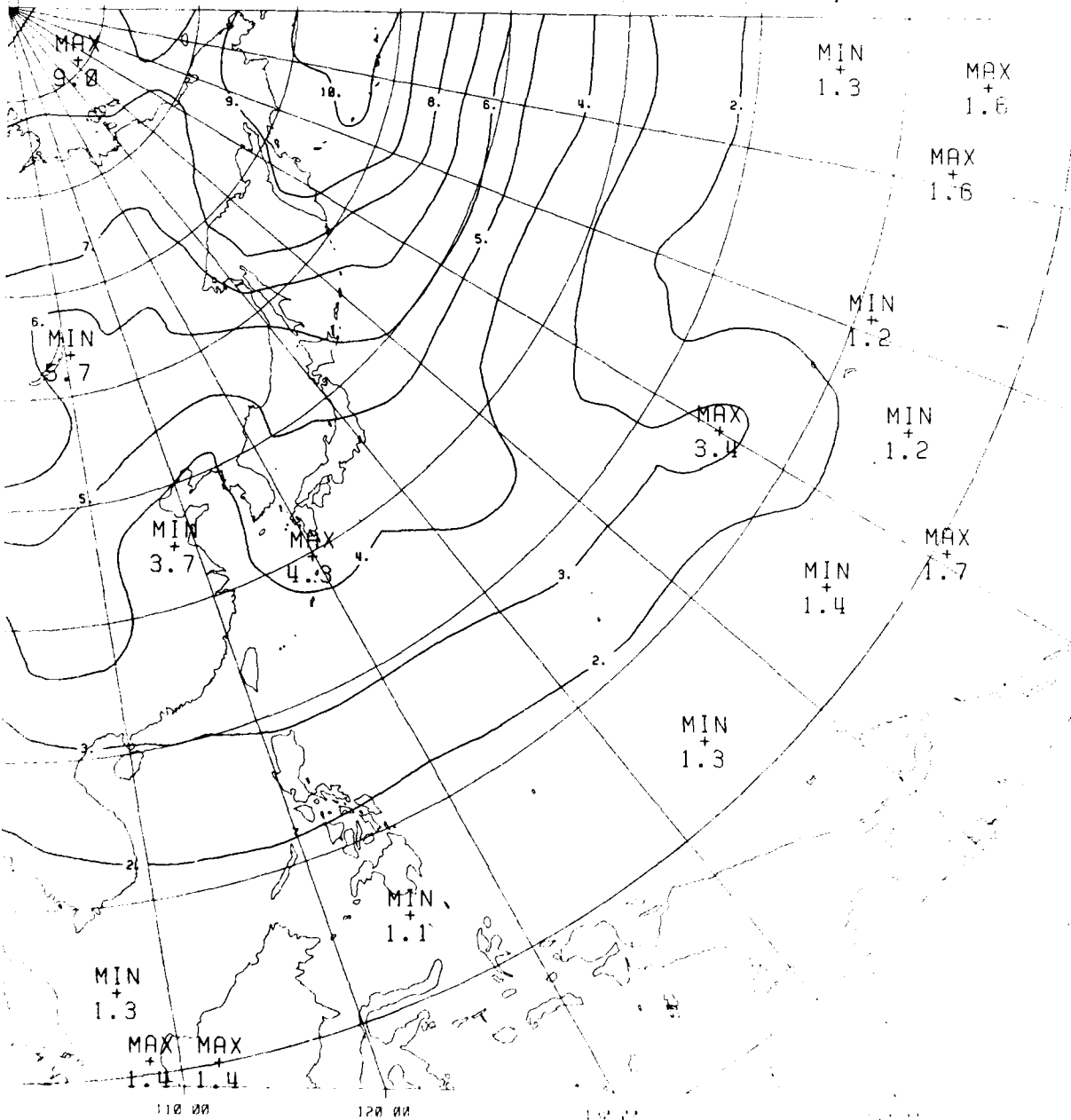
FIGURE A-68



UAPIP (POR 1973 1978)
NORTHERN HEMISPHERE
SECOND QUADRANT

SEPTEMBER
MEAN SEA LEVEL
PRESSURE, MILLIBARS

FIGURE A-69



LAND (POP 1973-1978)
 N. HEMISPHERE
 110 00 120 00

120 00
 120 00
 120 00

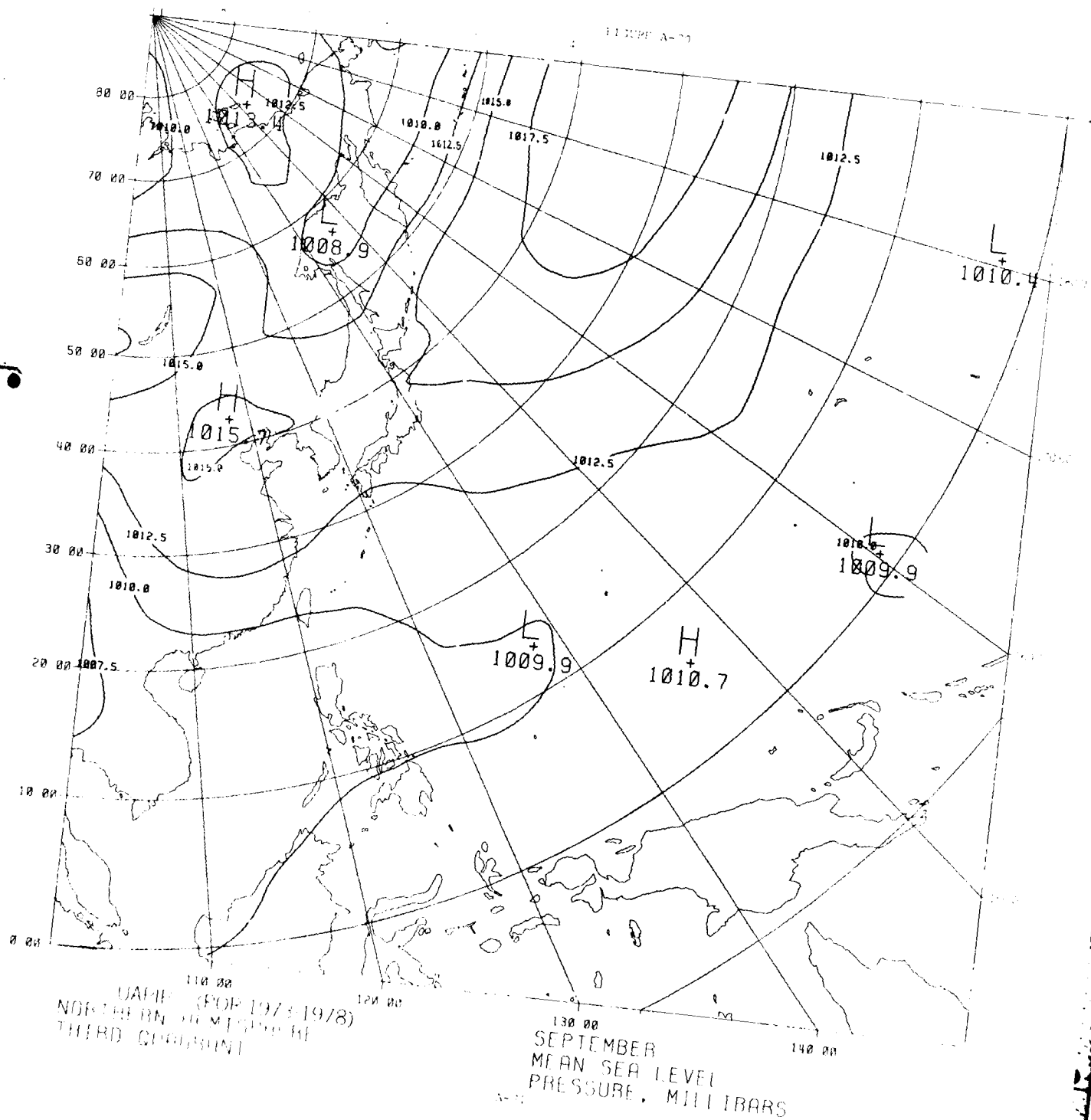
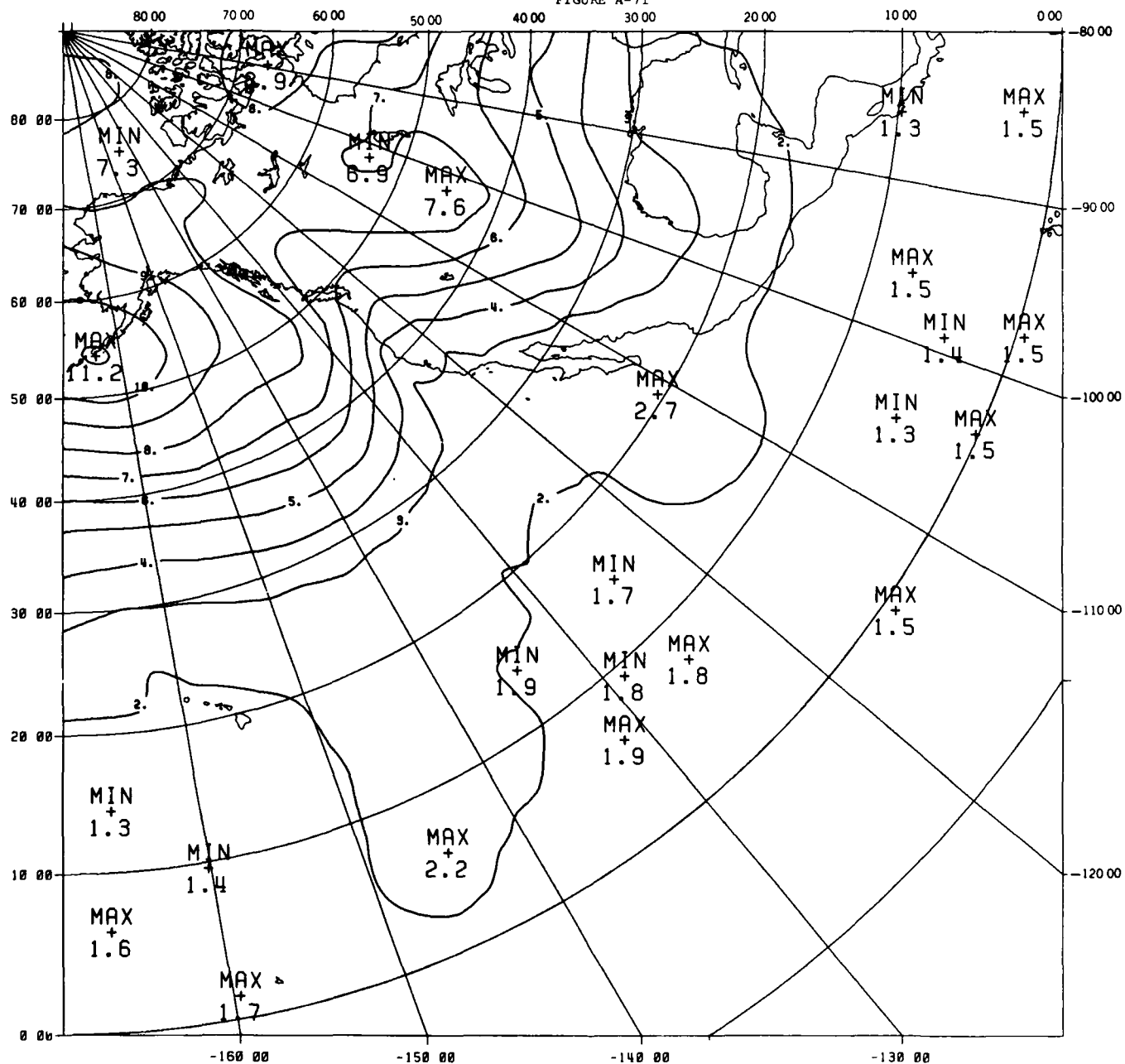


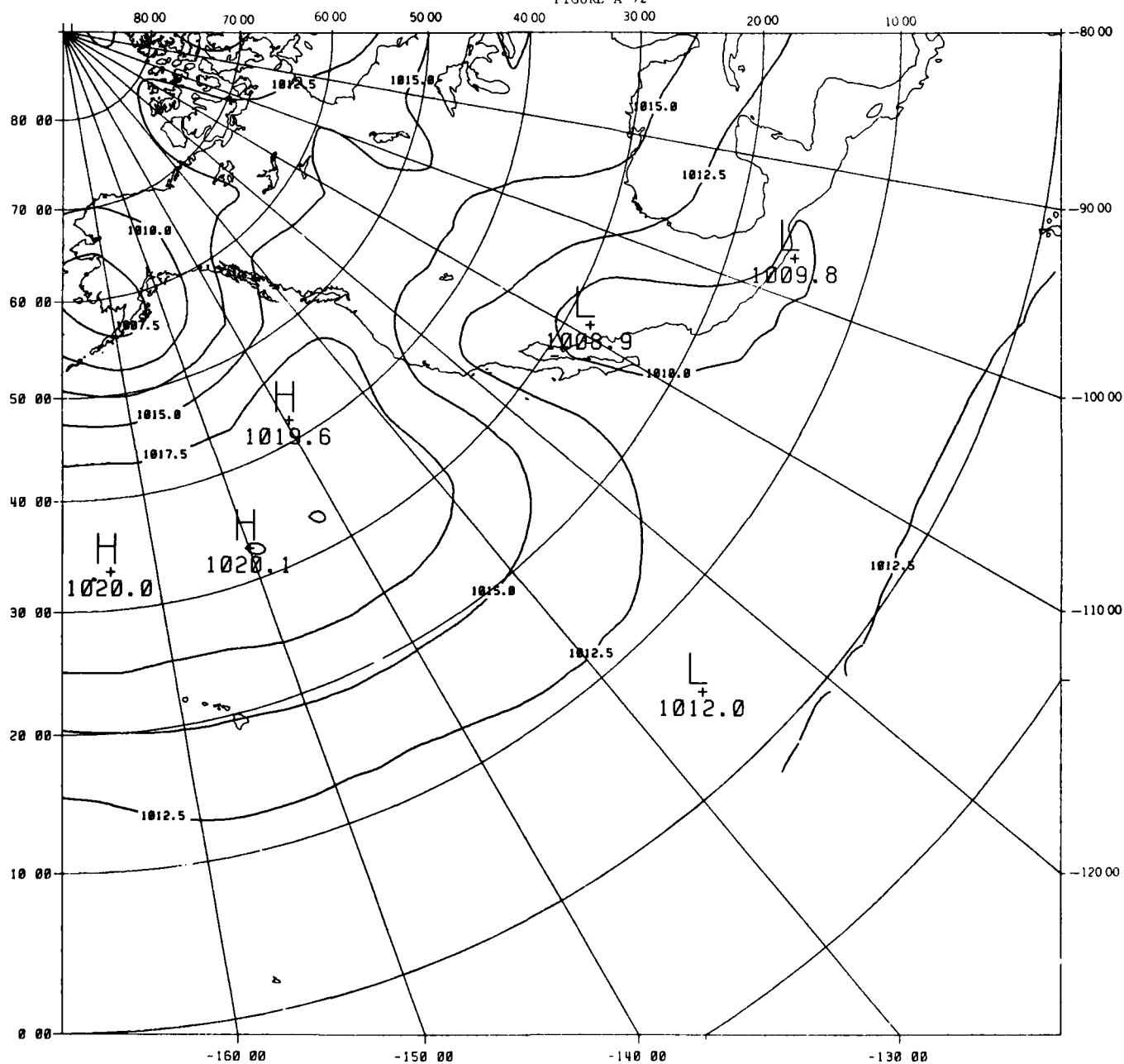
FIGURE A-71



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
FOURTH QUADRANT

SEPTEMBER
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

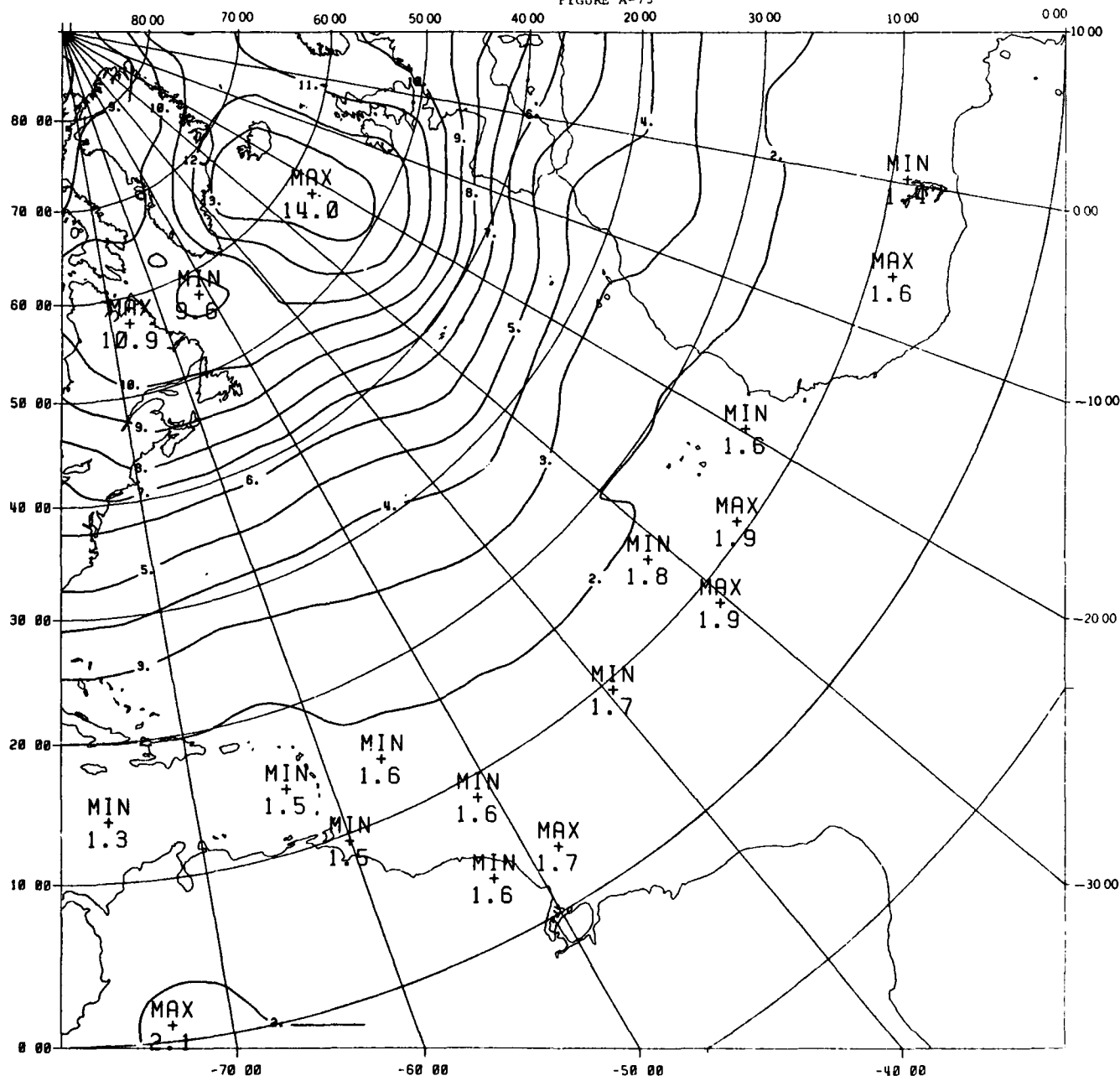
FIGURE A-72



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
FOURTH QUADRANT

SEPTEMBER
MEAN SEA LEVEL
PRESSURE, MILLIBARS

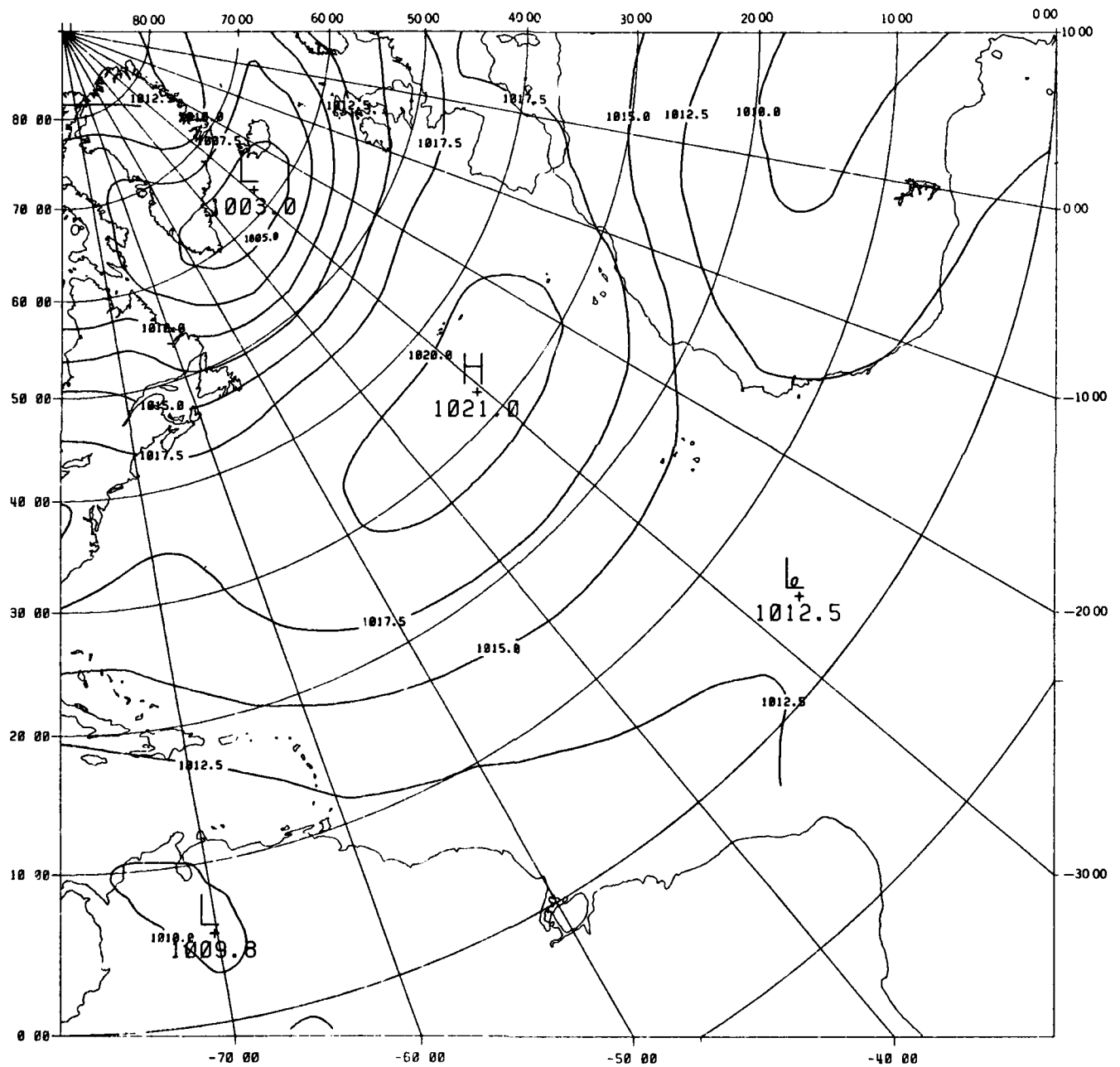
FIGURE A-73



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
FIRST QUADRANT

OCTOBER
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

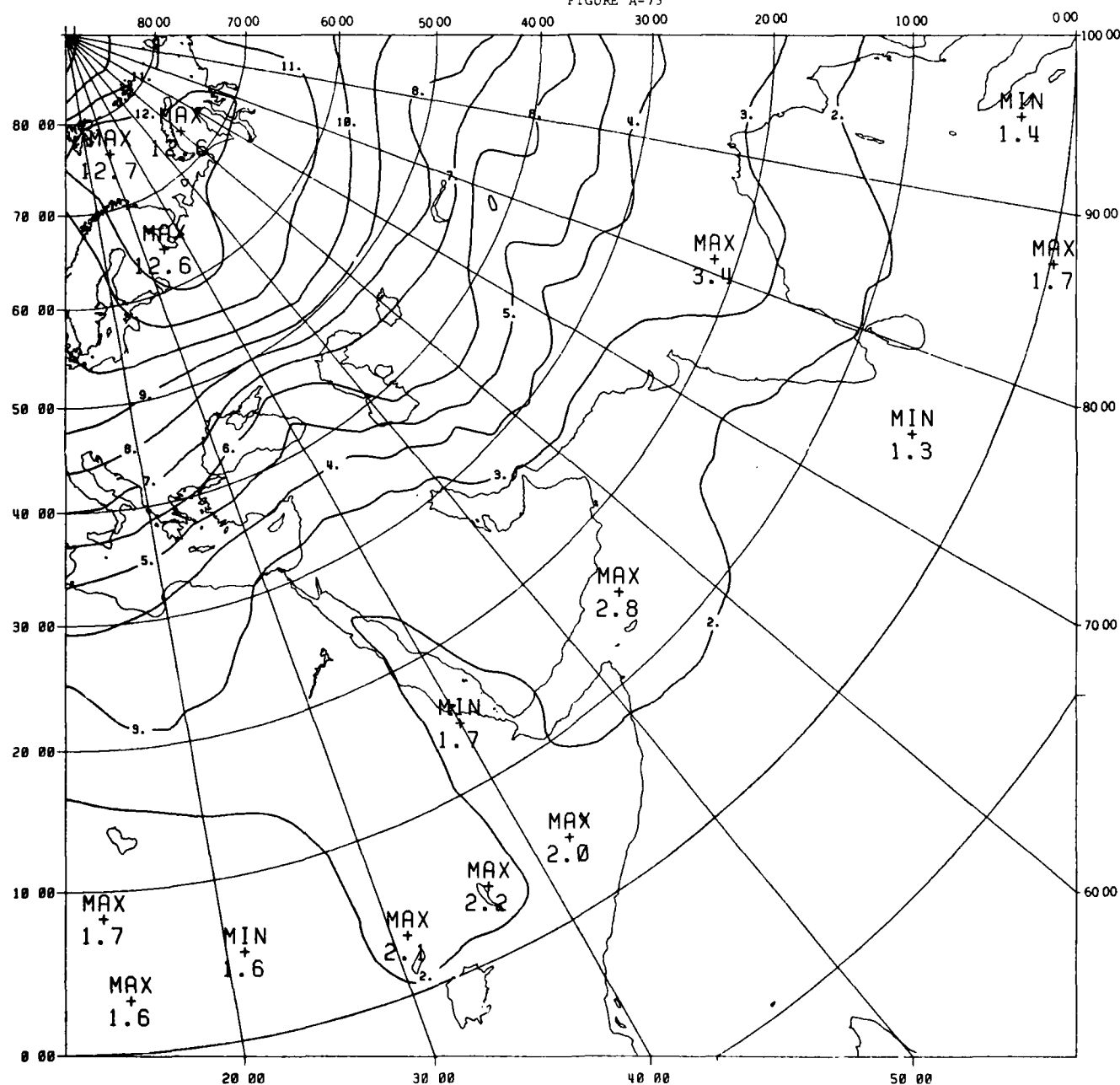
FIGURE A-74



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
FIRST QUADRANT

OCTOBER
MEAN SEA LEVEL
PRESSURE, MILLIBARS

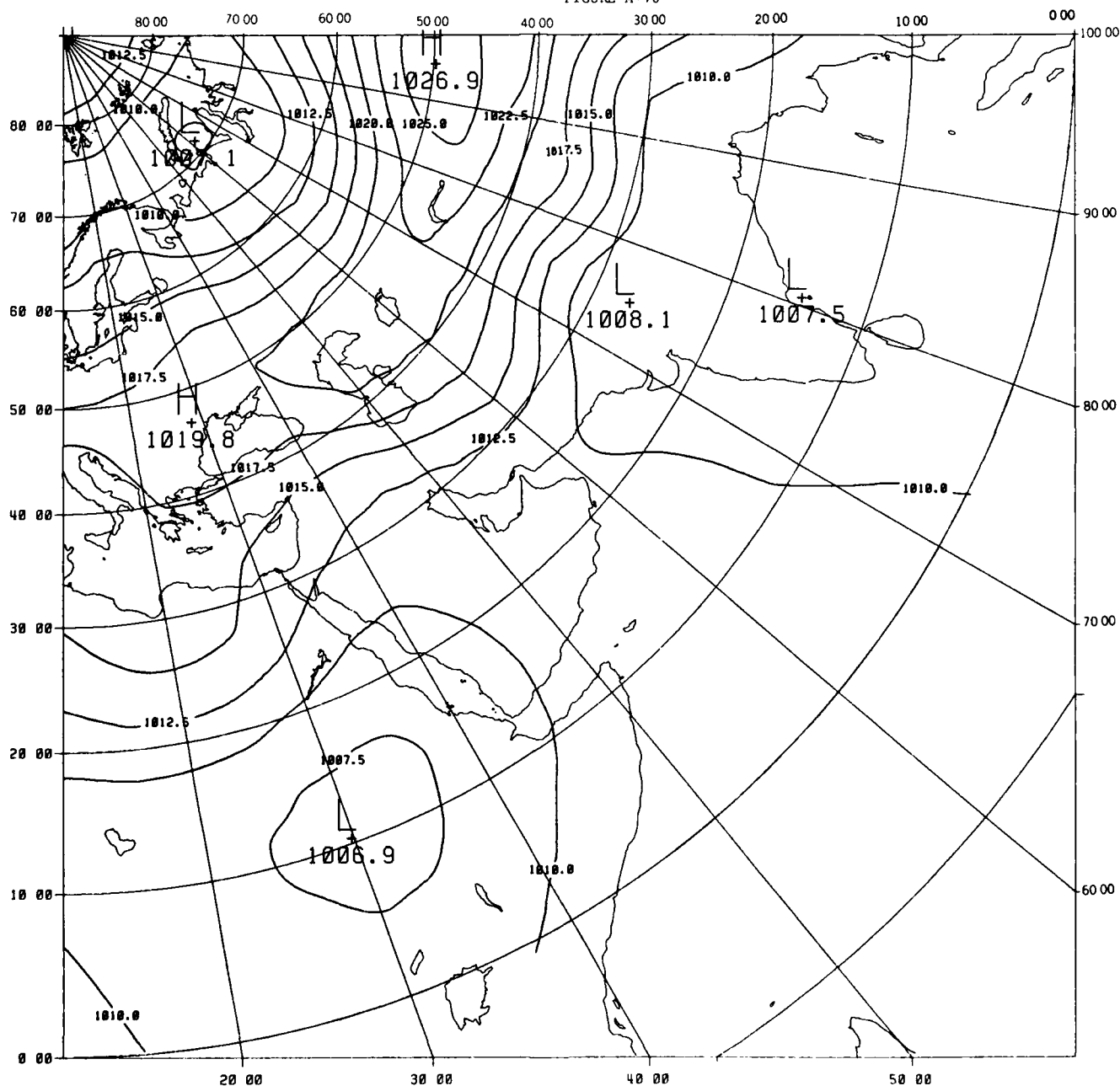
FIGURE A-75



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
SECOND QUADRANT

OCTOBER
MEAN SEA LEVEL
STDEV OF PRESSURE. MILLIBARS

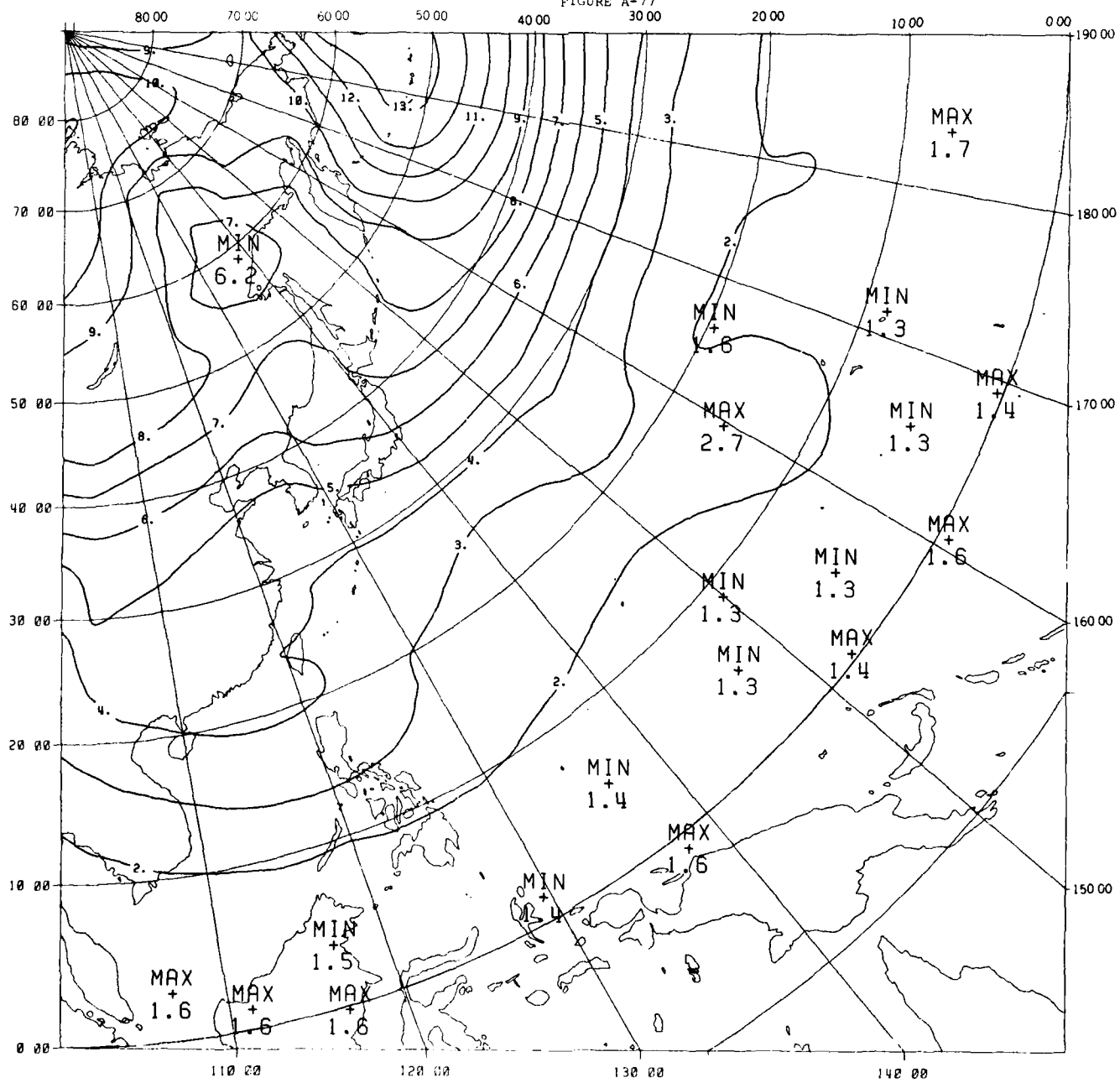
FIGURE A-76



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
SECOND QUADRANT

OCTOBER
MEAN SEA LEVEL
PRESSURE, MILLIBARS

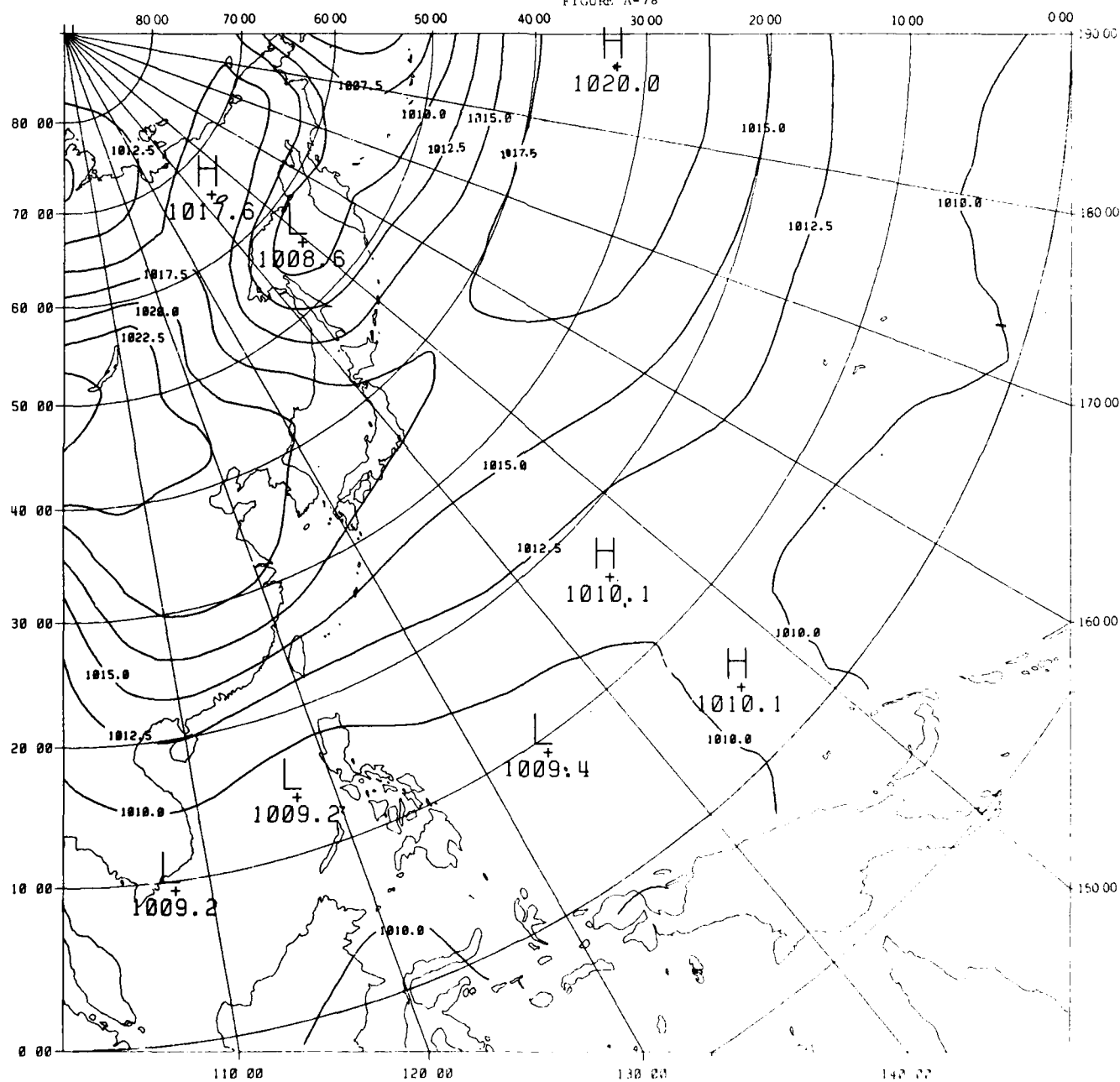
FIGURE A-77



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
THIRD QUADRANT

OCTOBER
MEAN SEA LEVEL
SIDE OF PRESSURE, MILLIBARS

FIGURE A-78



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
THIRD QUADRANT

OCTOBER
MEAN SEA LEVEL
PRESSURE, MILLIBARS

FIGURE A-79

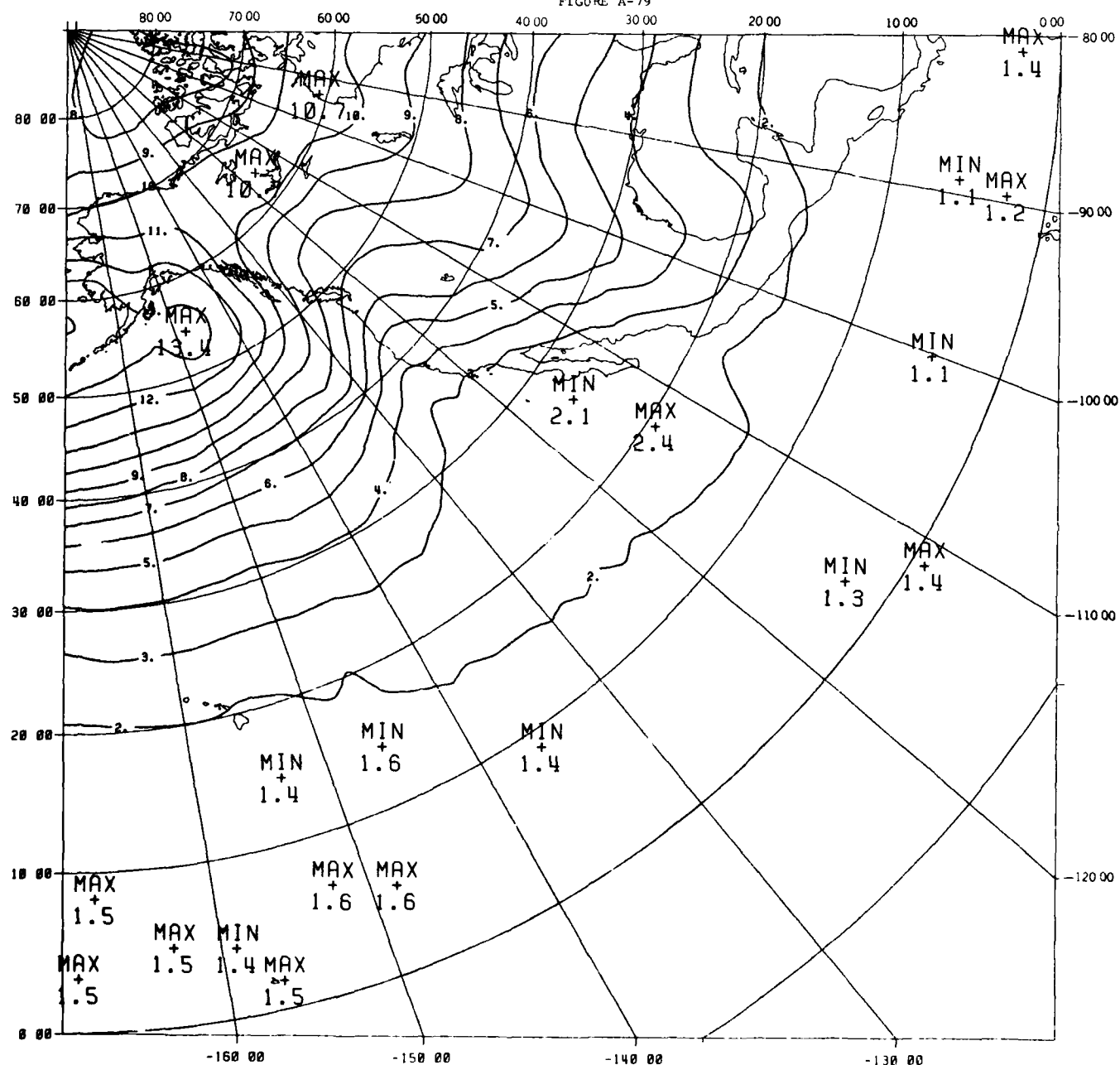
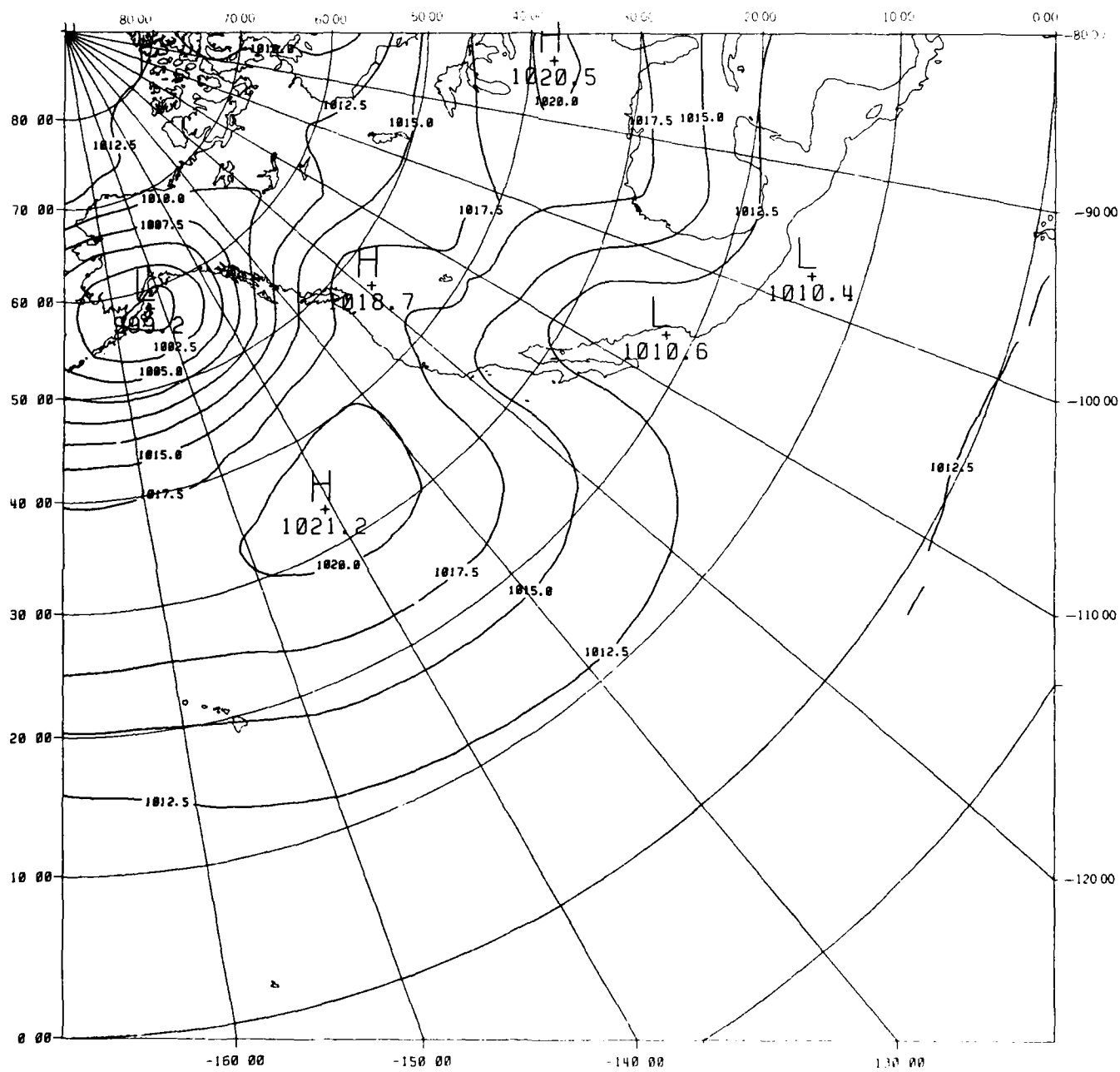


FIGURE A-80



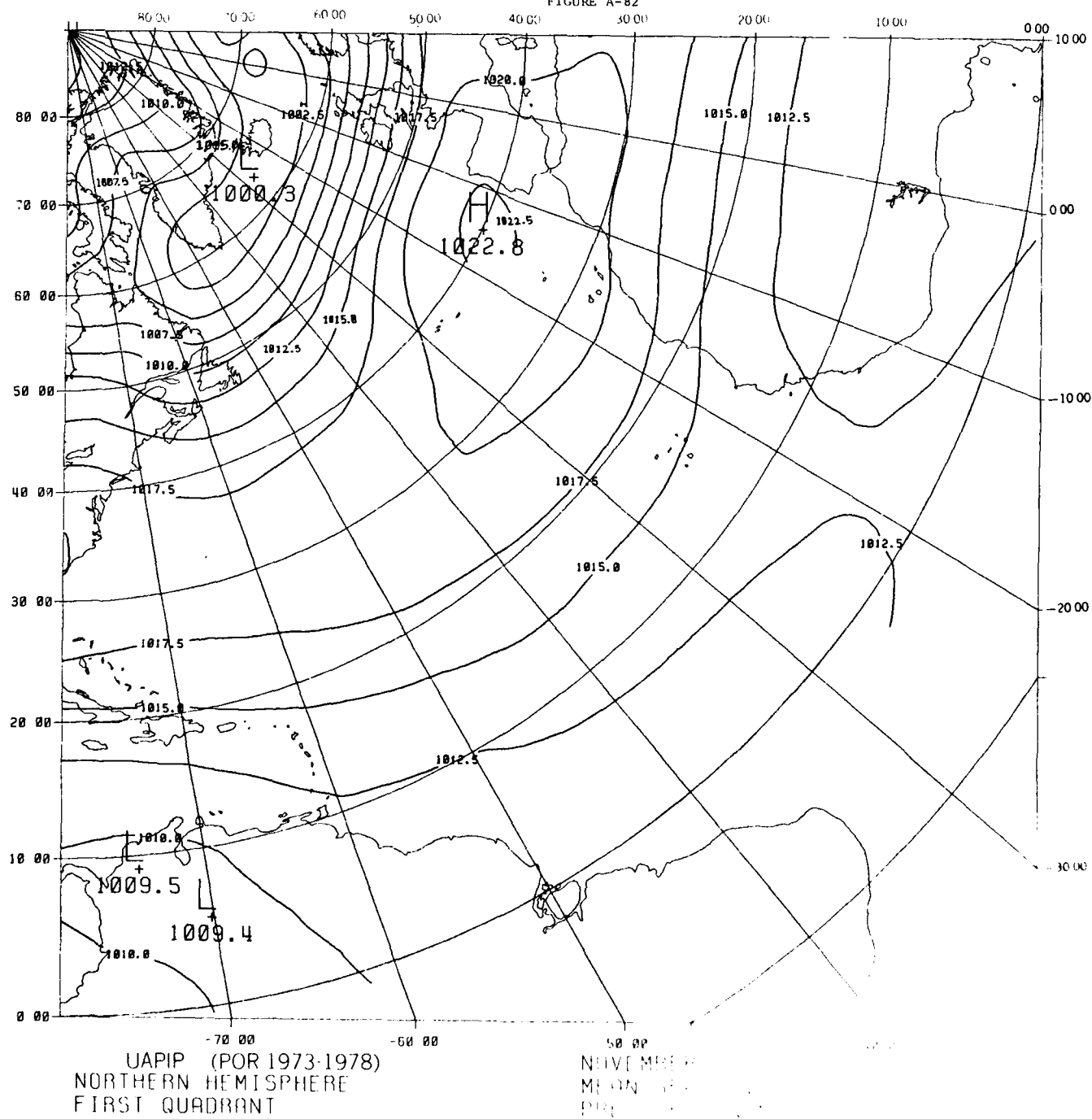
UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
FOURTH QUADRANT

OCTOBER
MEAN SEA LEVEL
PRESSURE, MILLIBARS

209 222

NOVEMBER
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

30 00



AD-A130 207

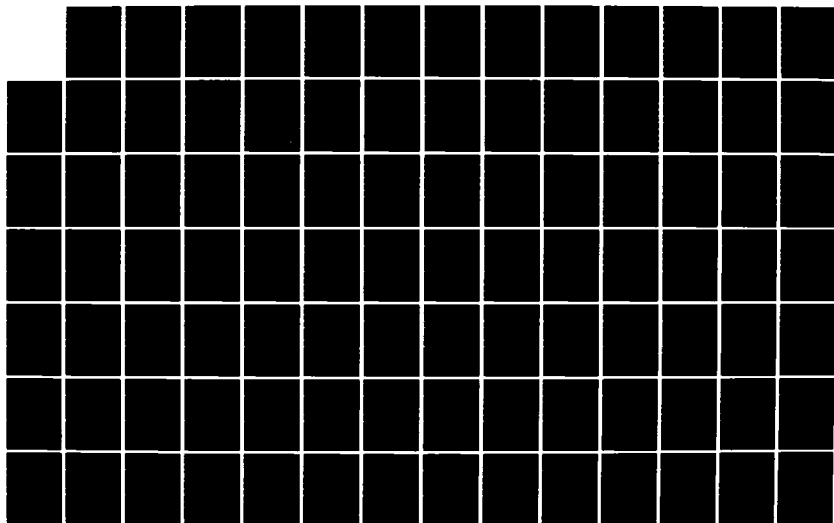
ATLAS OF MEAN SEA-LEVEL PRESSURE(U) AIR FORCE
ENVIRONMENTAL TECHNICAL APPLICATIONS CENTER SCOTT AFB
IL H A CHARY NOV 82 USAFETAC-TN-82-007 SBI-AD-E850 381

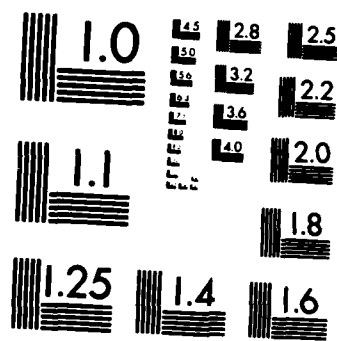
2/3

UNCLASSIFIED

F/G 4/2

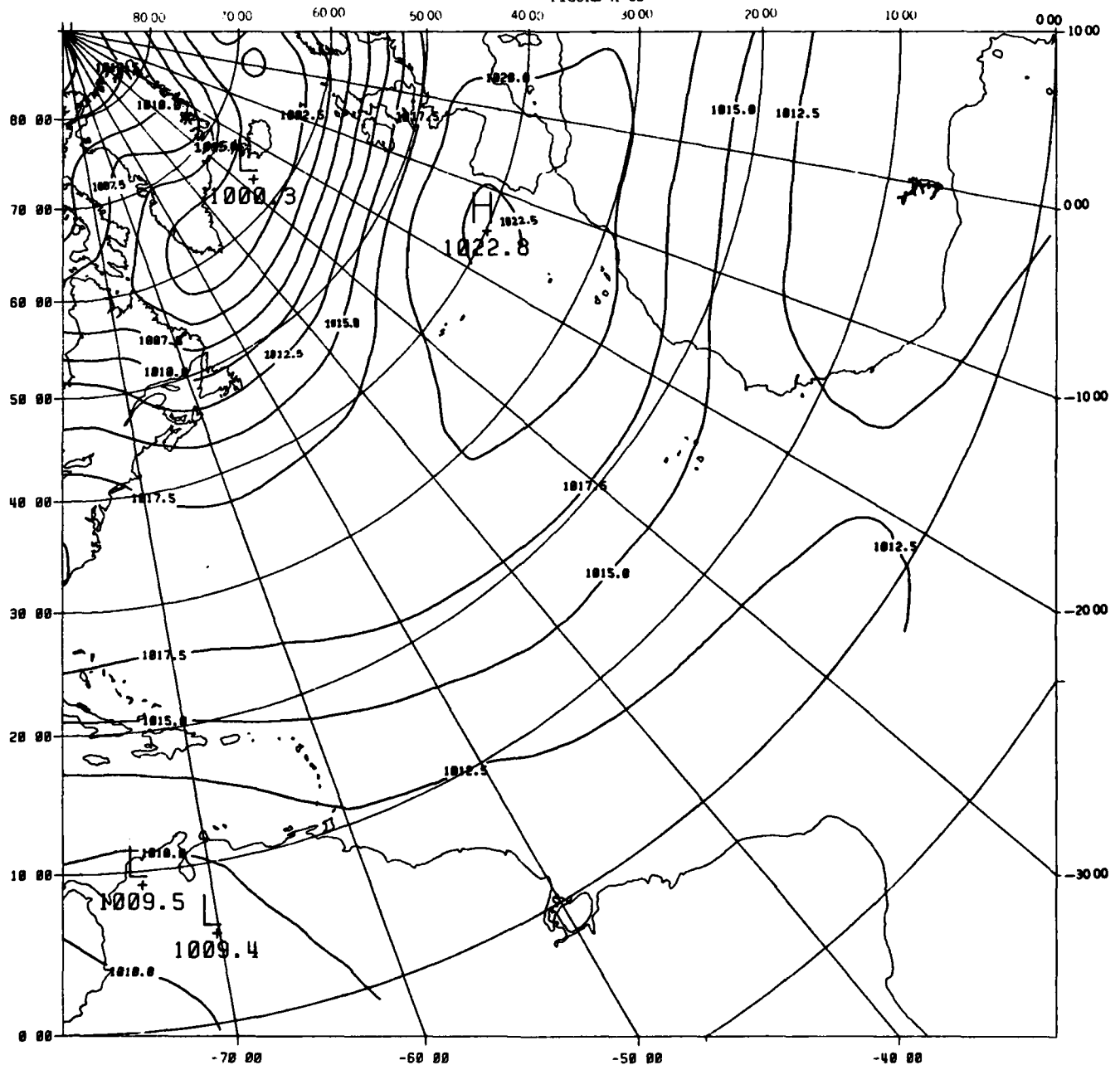
NL





MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

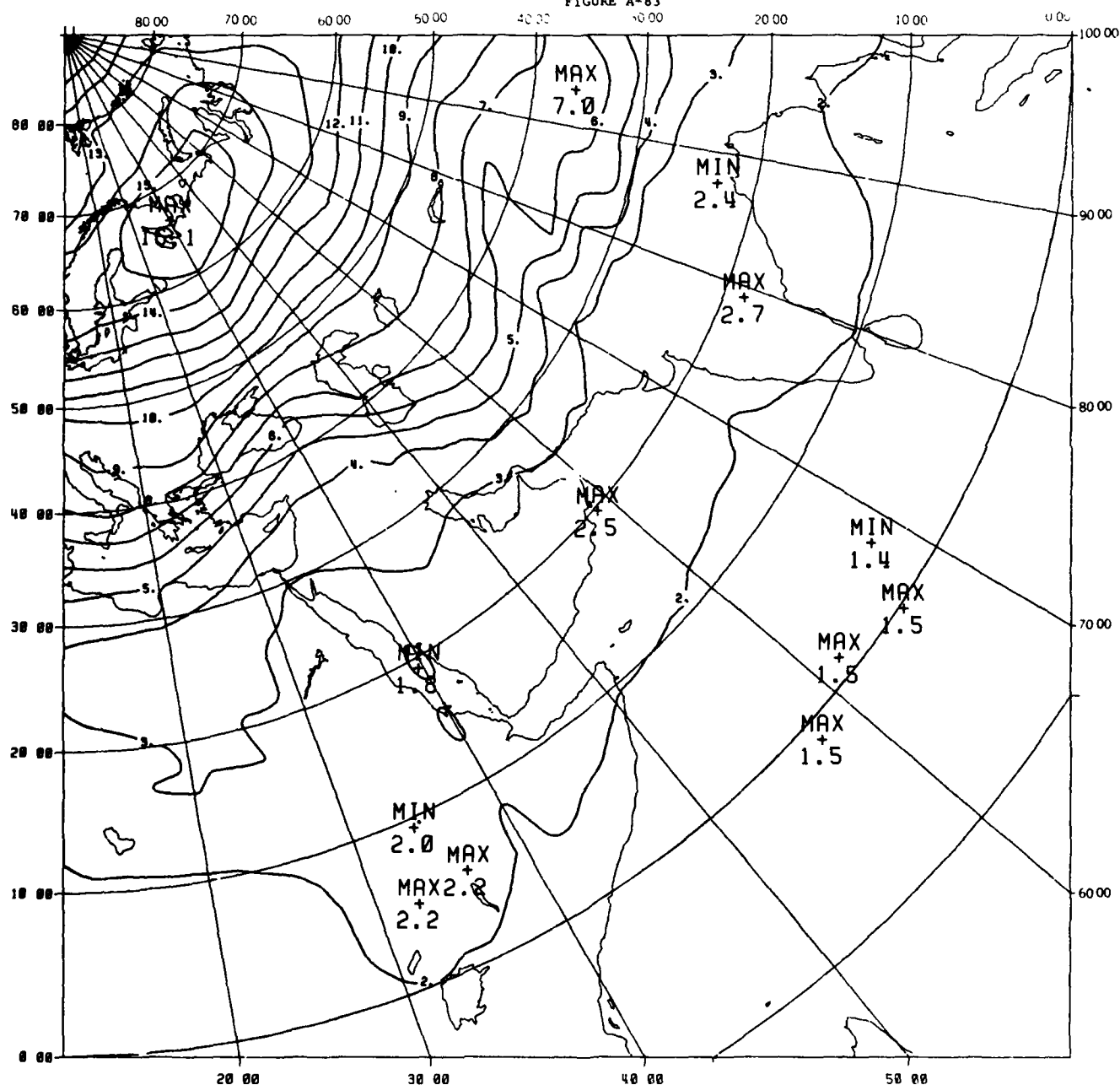
FIGURE A-82



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
FIRST QUADRANT

NOVEMBER
MEAN SEA LEVEL
PRESSURE IN MILLIBARS

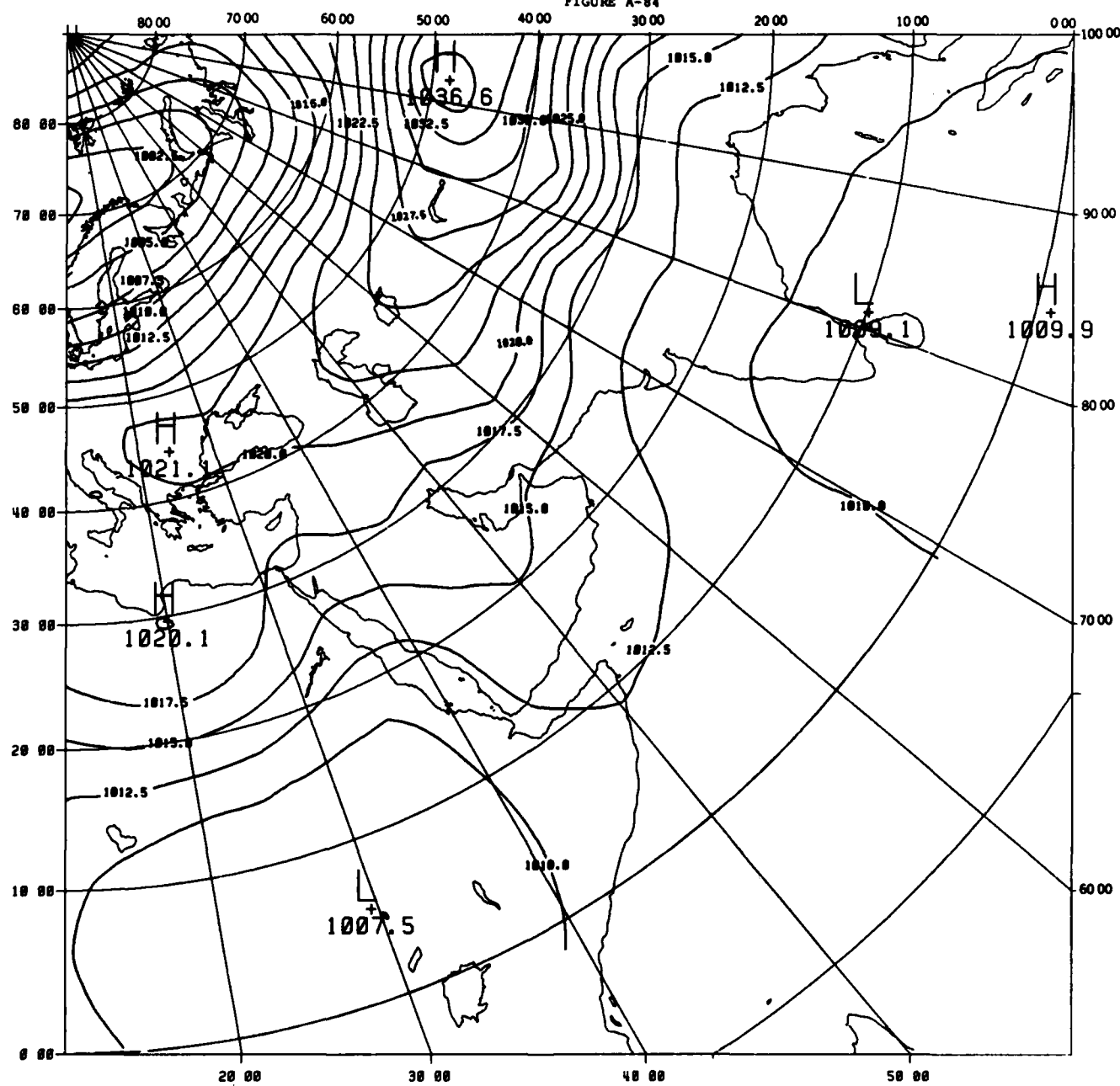
FIGURE A-83



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
SECOND QUADRANT

NOVEMBER
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

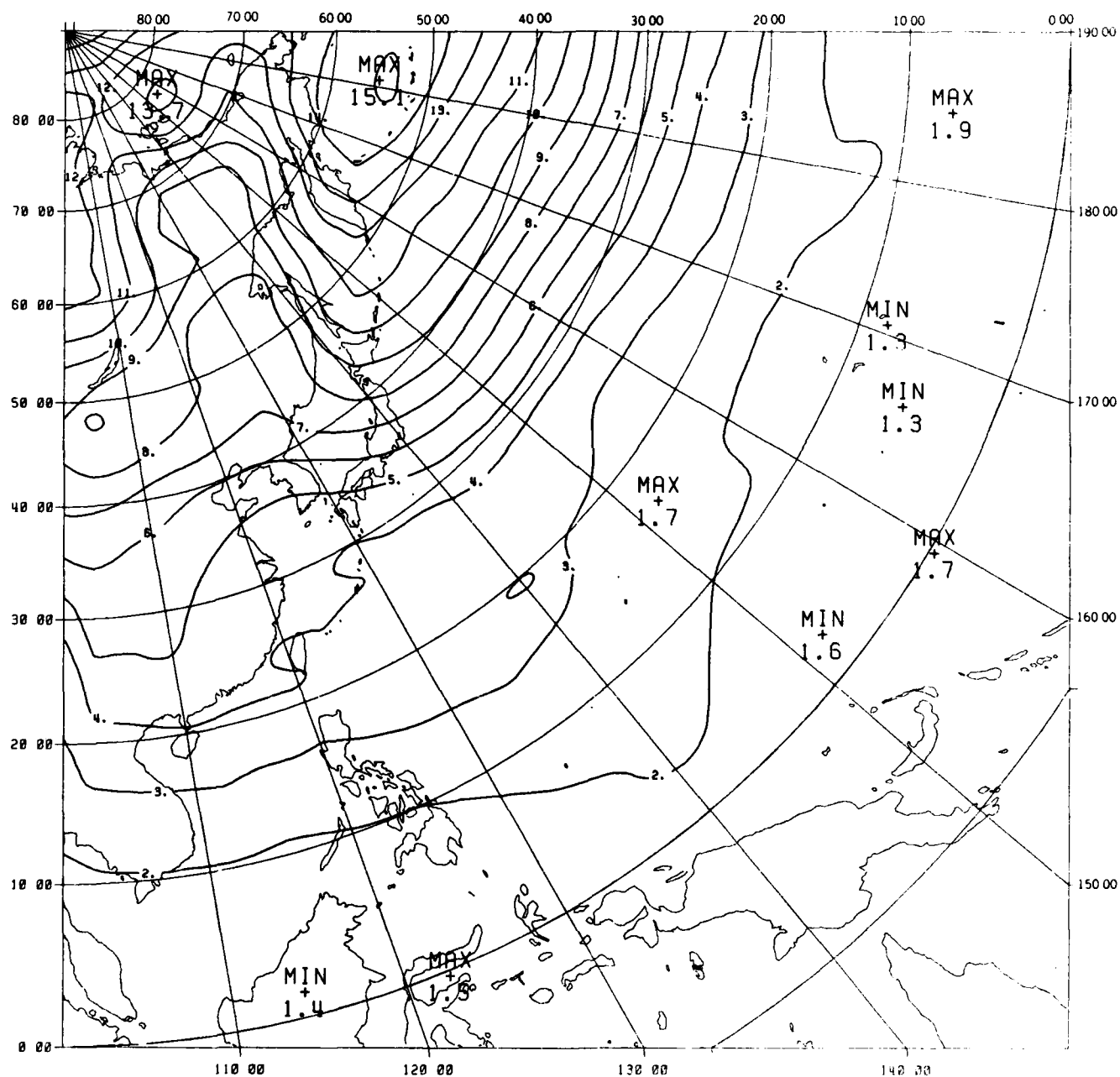
FIGURE A-84



UAIIP (POR 1973-1978)
NORTHERN HEMISPHERE
SECOND QUADRANT

NOVEMBER
MEAN SEA LEVEL
PRESSURE IN MILLIBARS

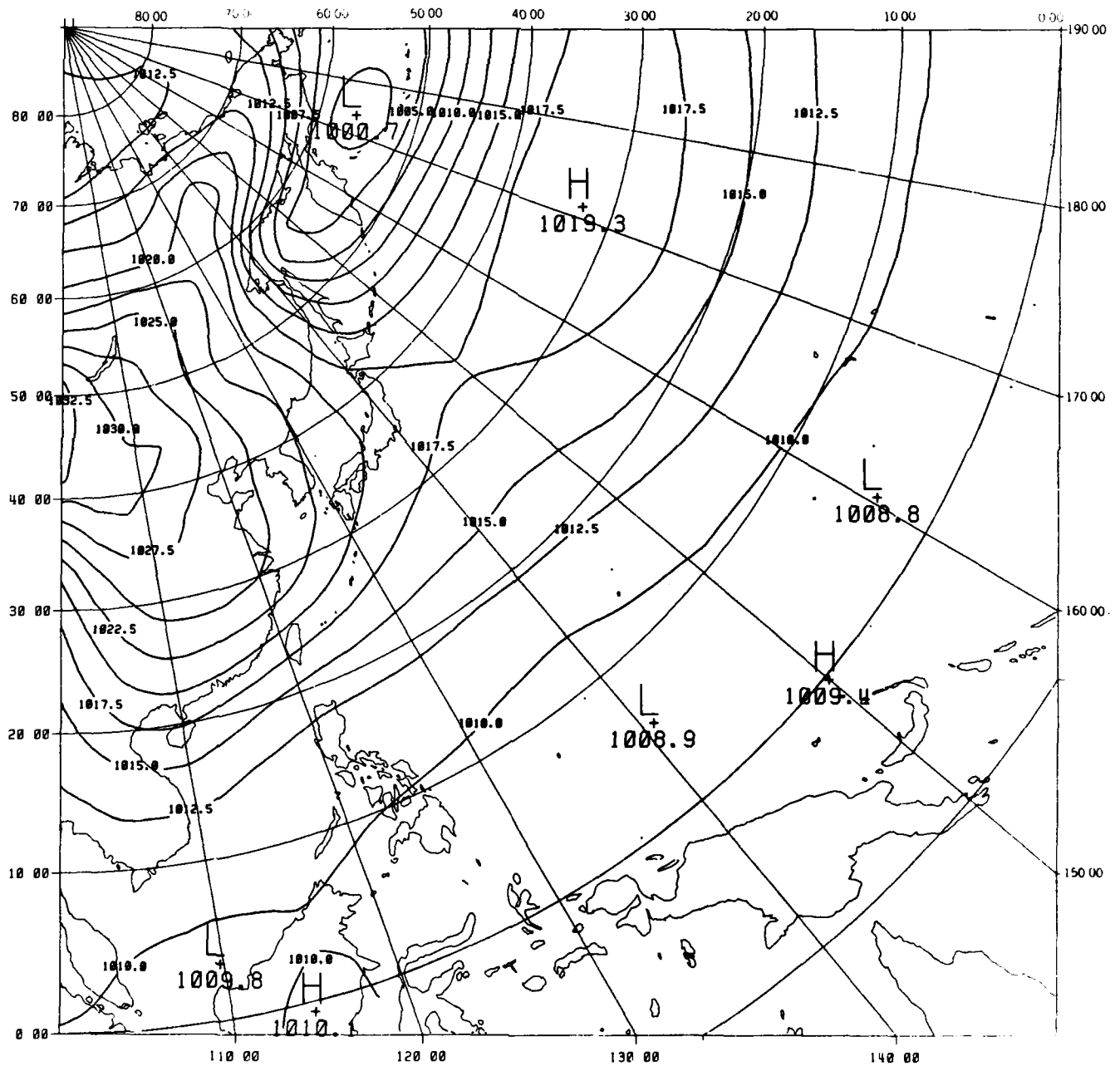
FIGURE A-85



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
THIRD QUADRANT

NOVEMBER
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

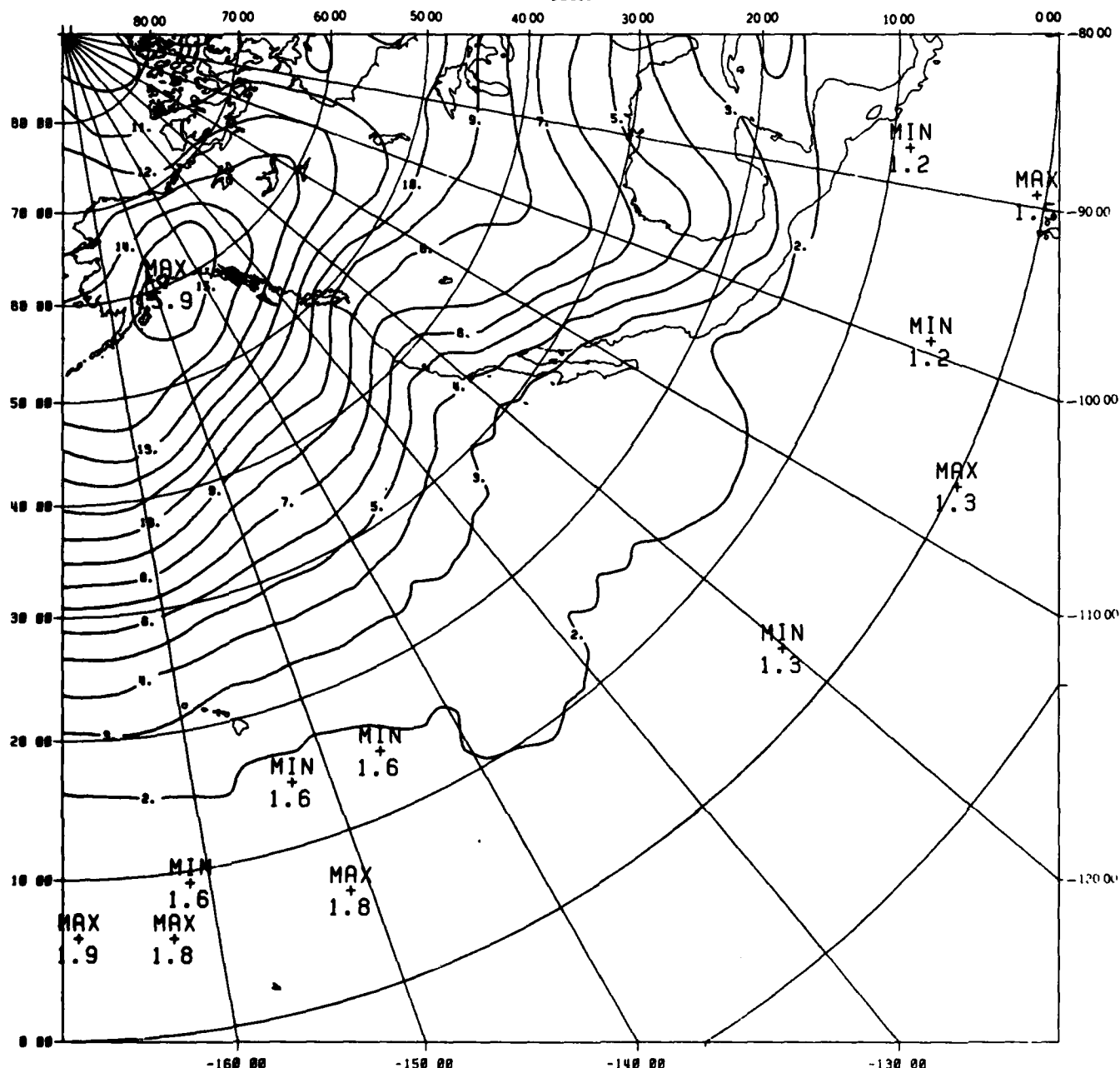
FIGURE A-86



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
THIRD QUADRANT

NOVEMBER
MEAN SEA LEVEL
PRESSURE IN MILLIBARS

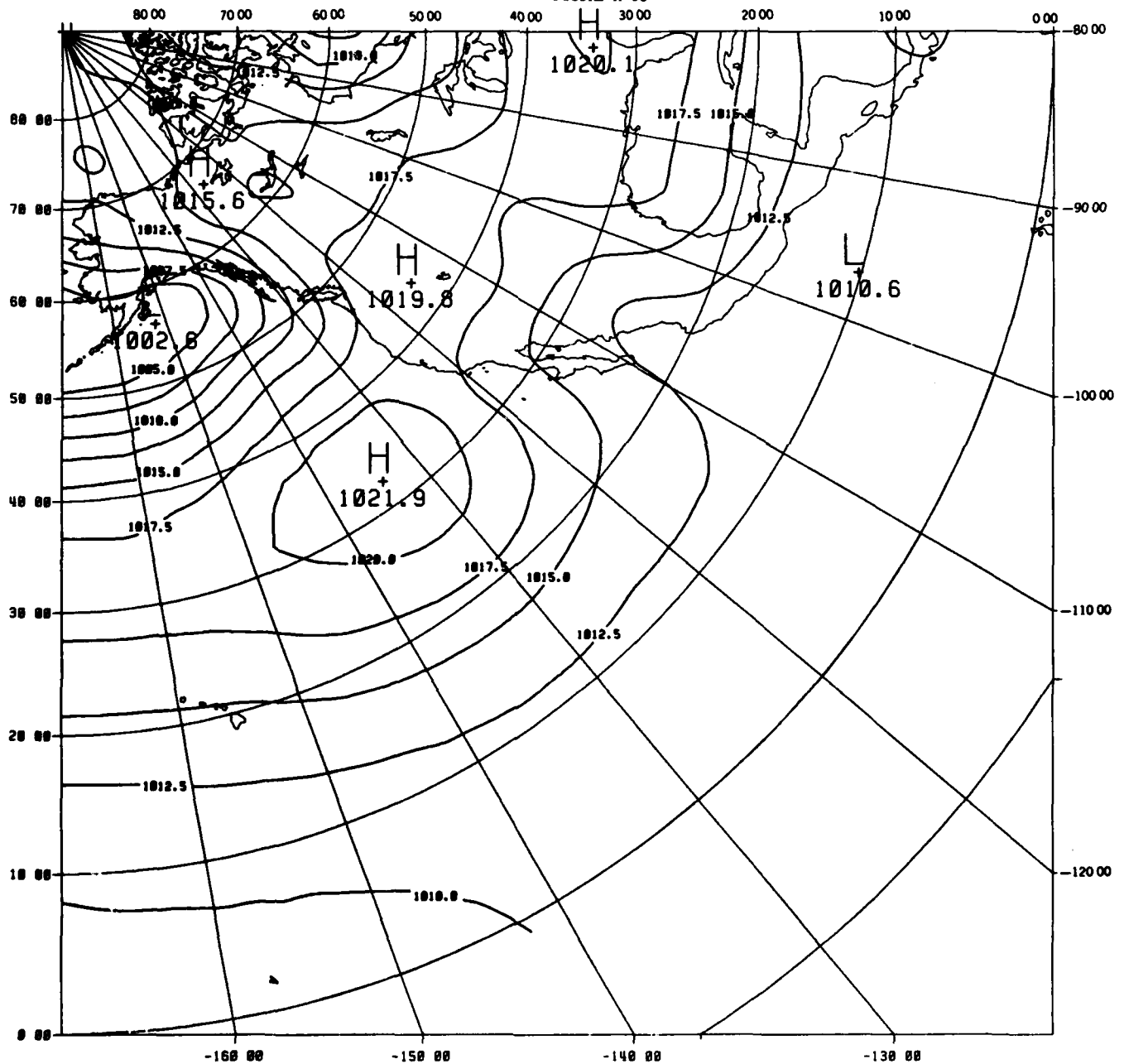
FIGURE A-87



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
FOURTH QUADRANT

NOVEMBER
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

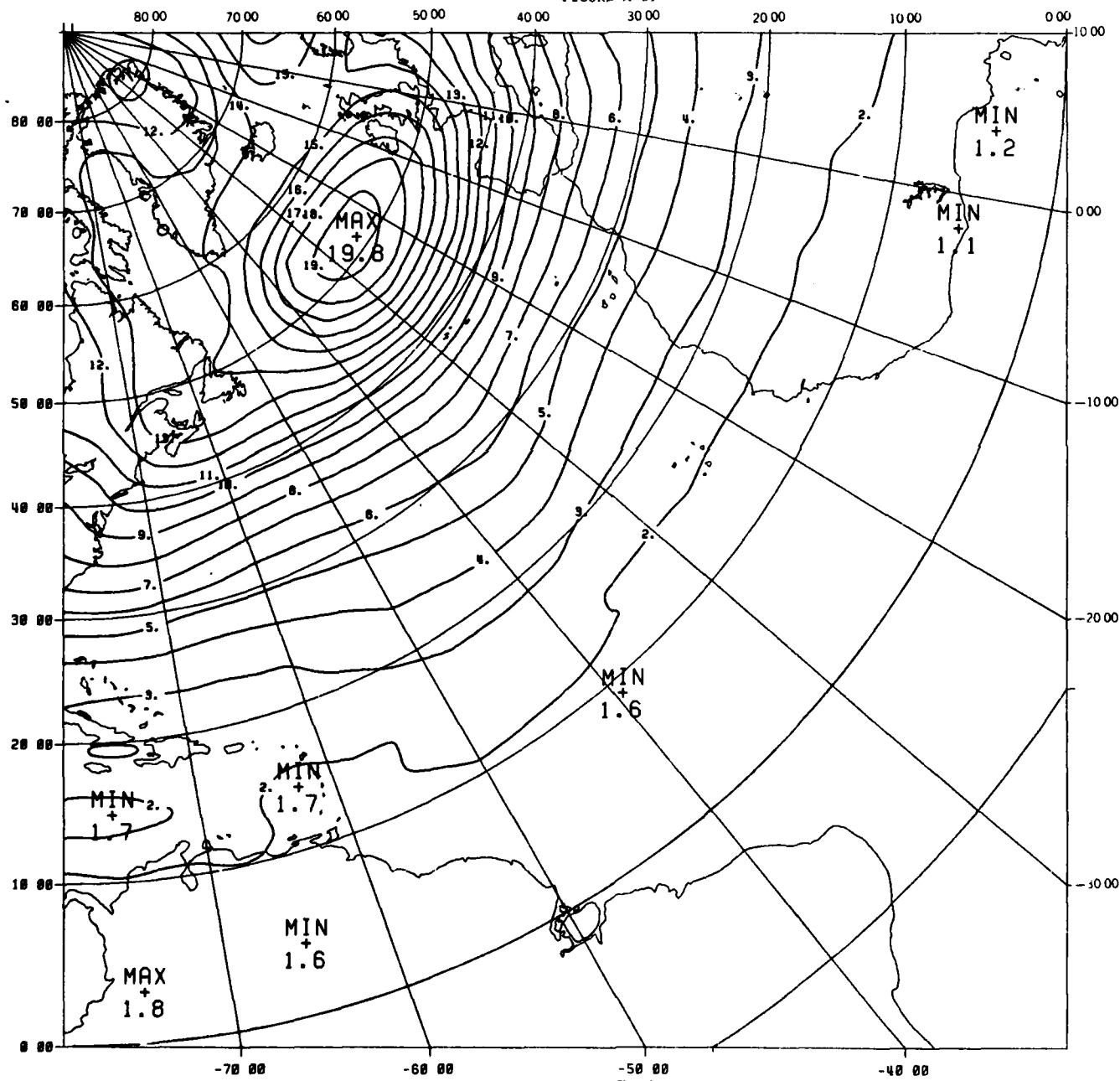
FIGURE A-88



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
FOURTH QUADRANT

NOVEMBER
MEAN SEA LEVEL
PRESSURE, MILLIBARS

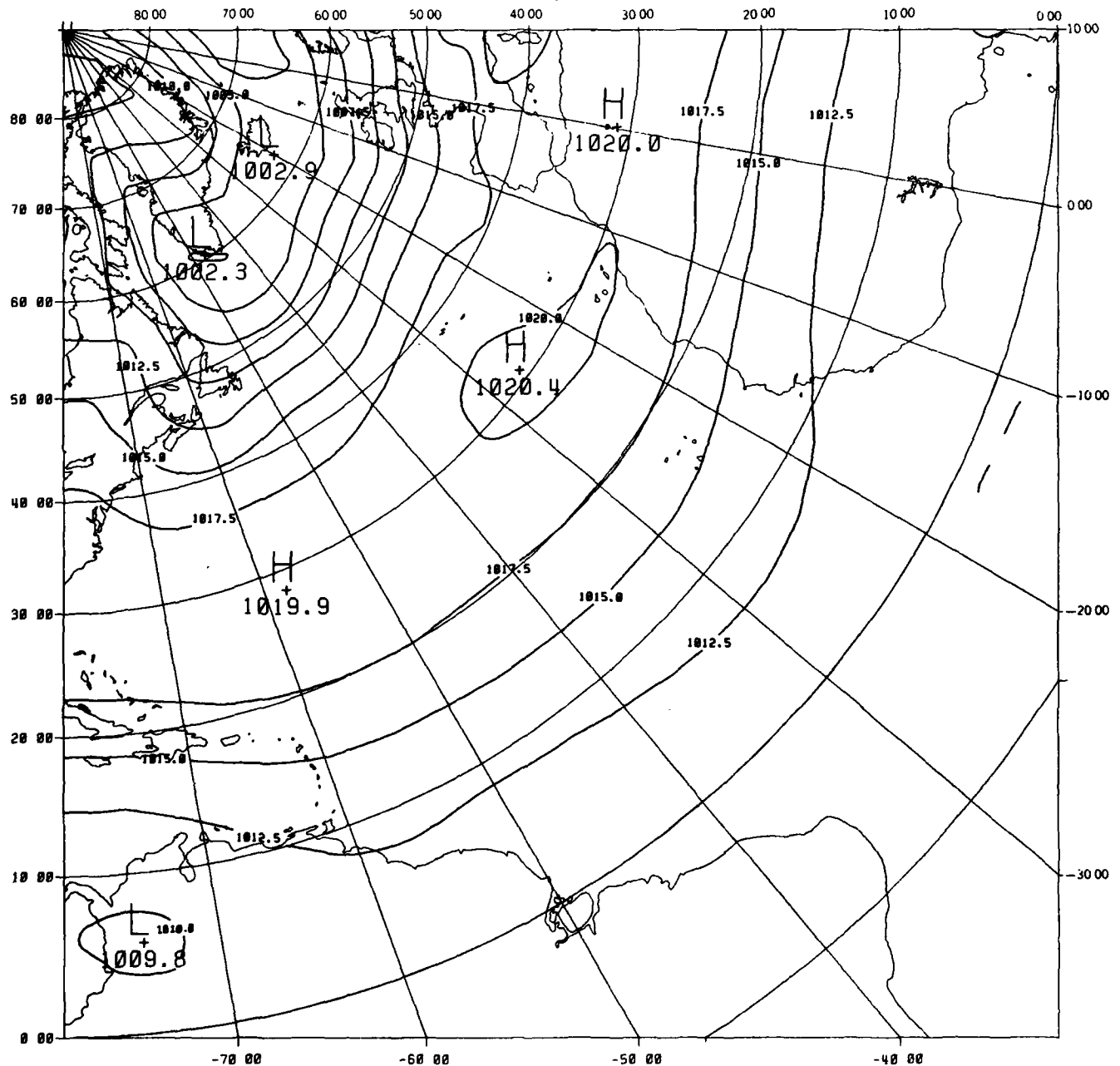
FIGURE A-89



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
FIRST QUADRANT

DECEMBER
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS
A-90

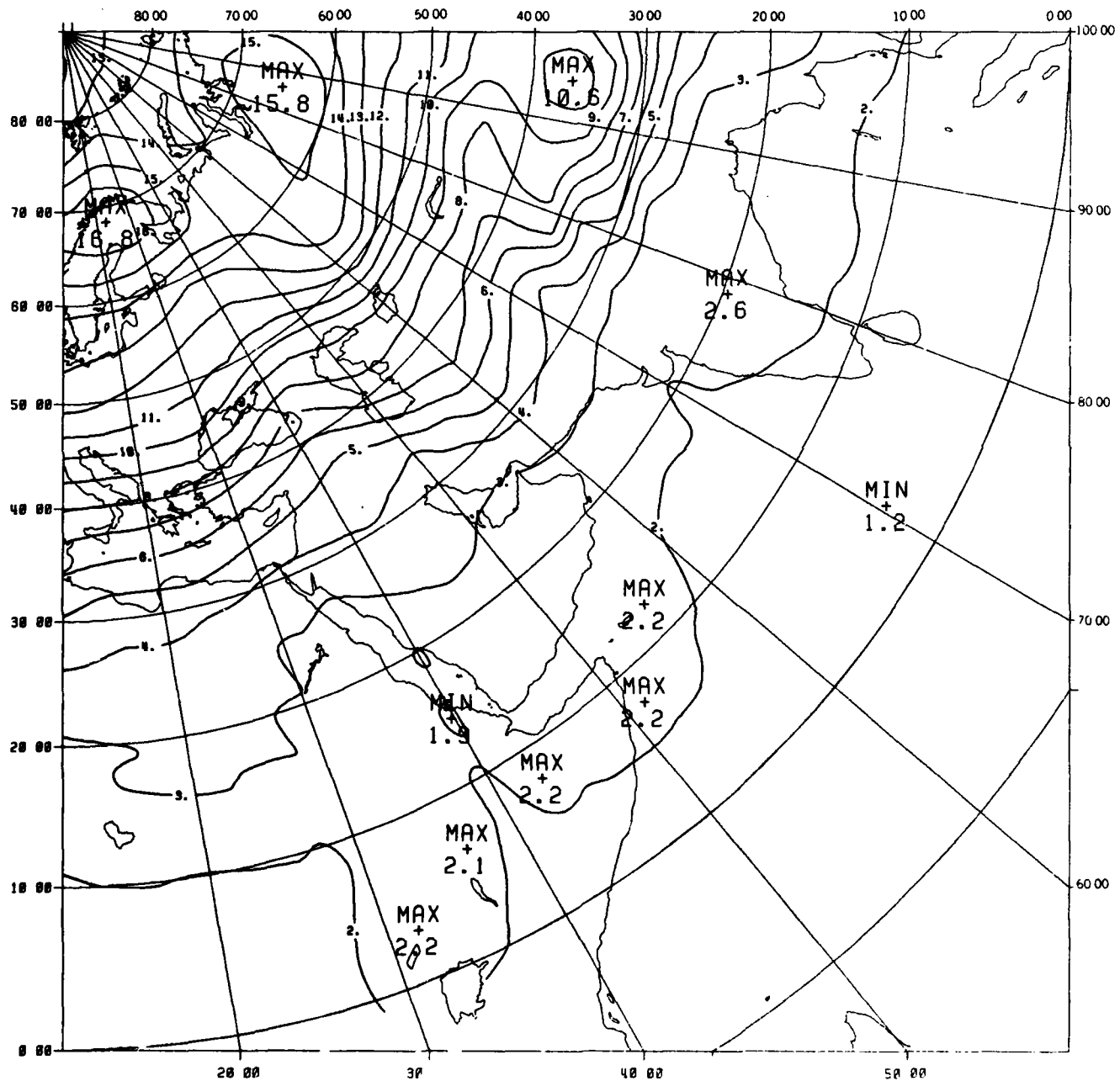
FIGURE A-90



UAPIP (FOR 1973-1978)
NORTHERN HEMISPHERE
FIRST QUADRANT

DECEMBER
MEAN SEA LEVEL
PRESSURE, MILLIBARS

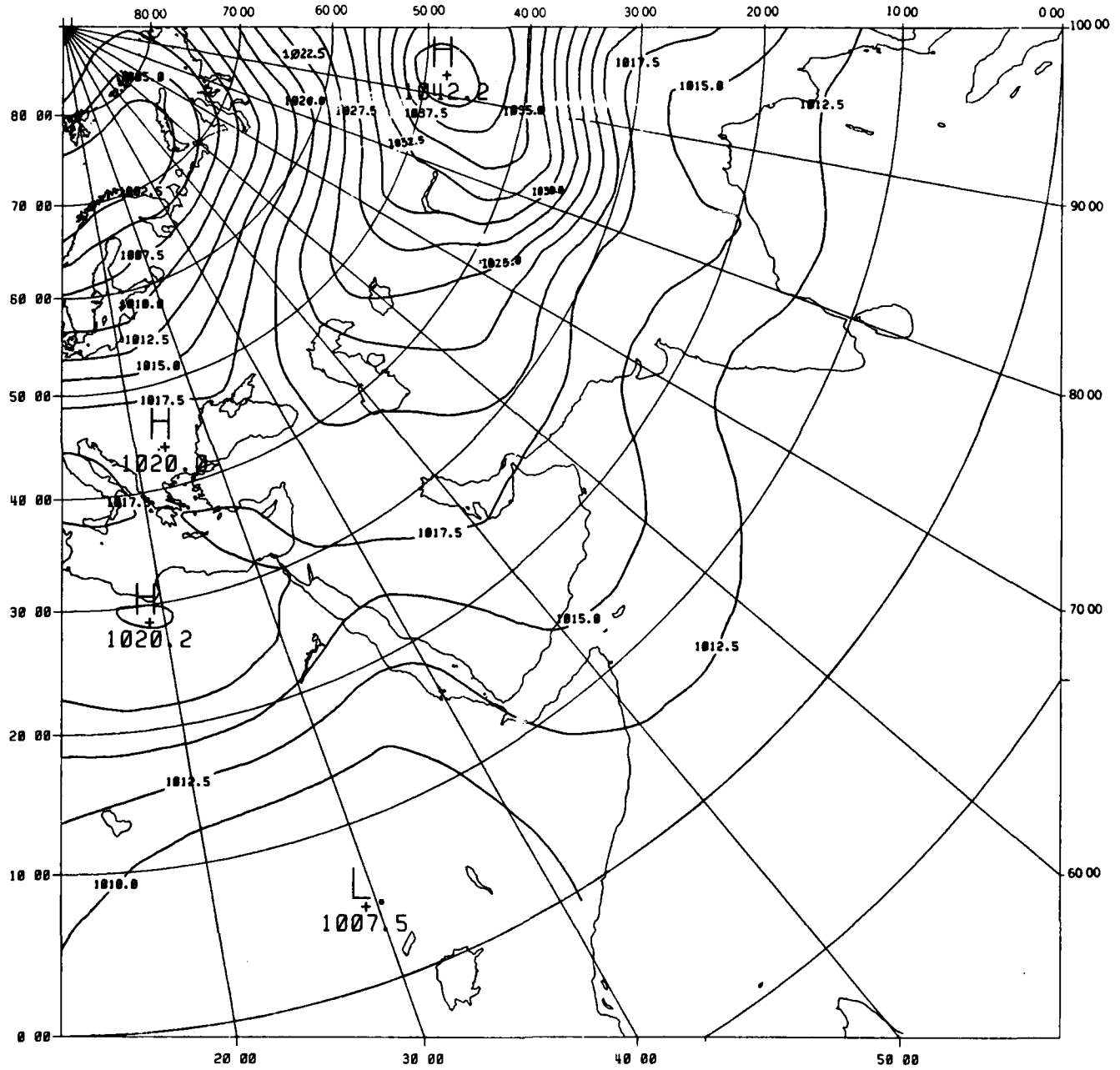
FIGURE A-91



UAPIP (POR 1971-1978)
NORTHERN HEMISPHERE
SECOND QUADRANT

DECEMBER
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

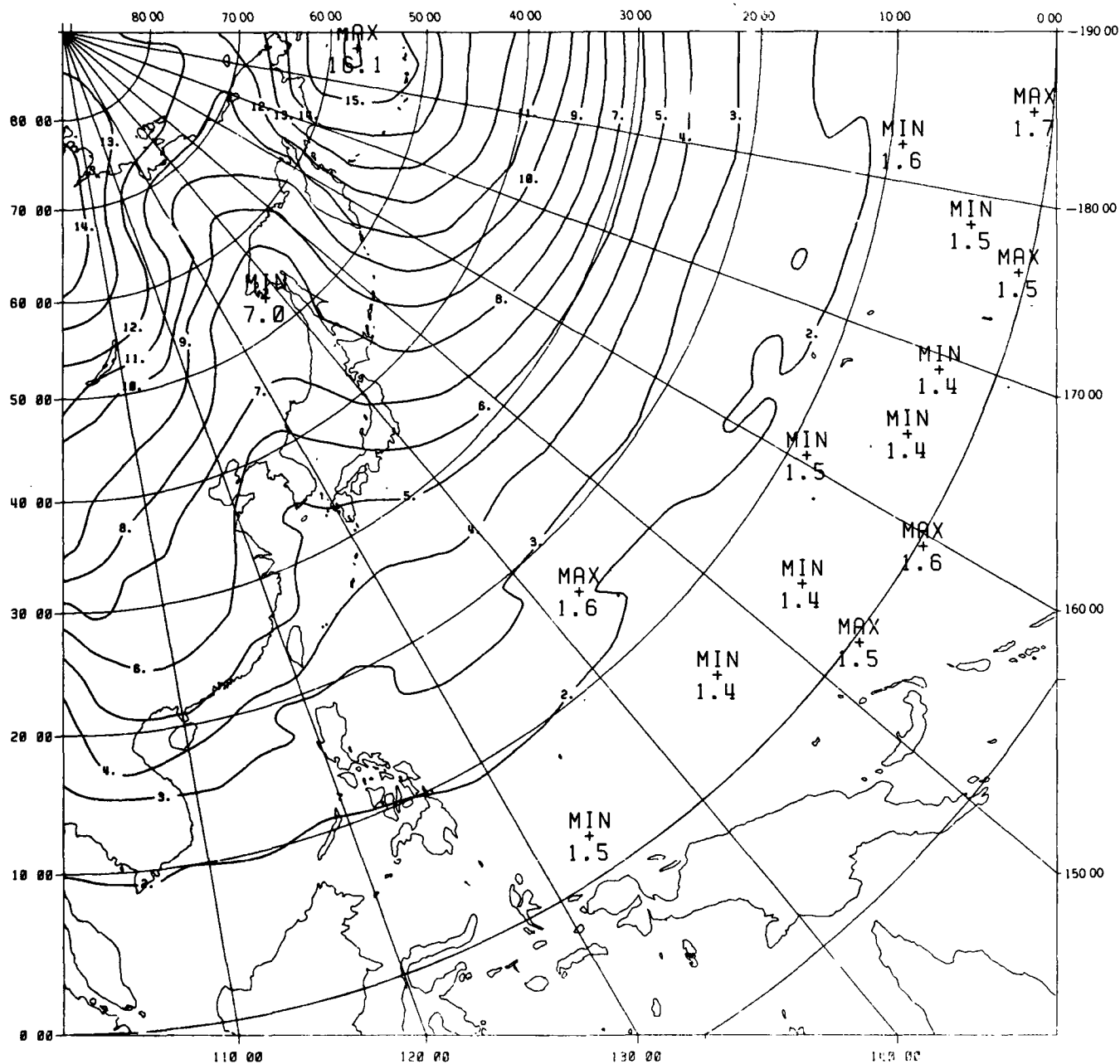
FIGURE A-92



UAIIP (POR 1973-1978)
NORTHERN HEMISPHERE
SECOND QUADRANT

DECEMBER
MEAN SEA LEVEL
PRESSURE IN MILLIBARS

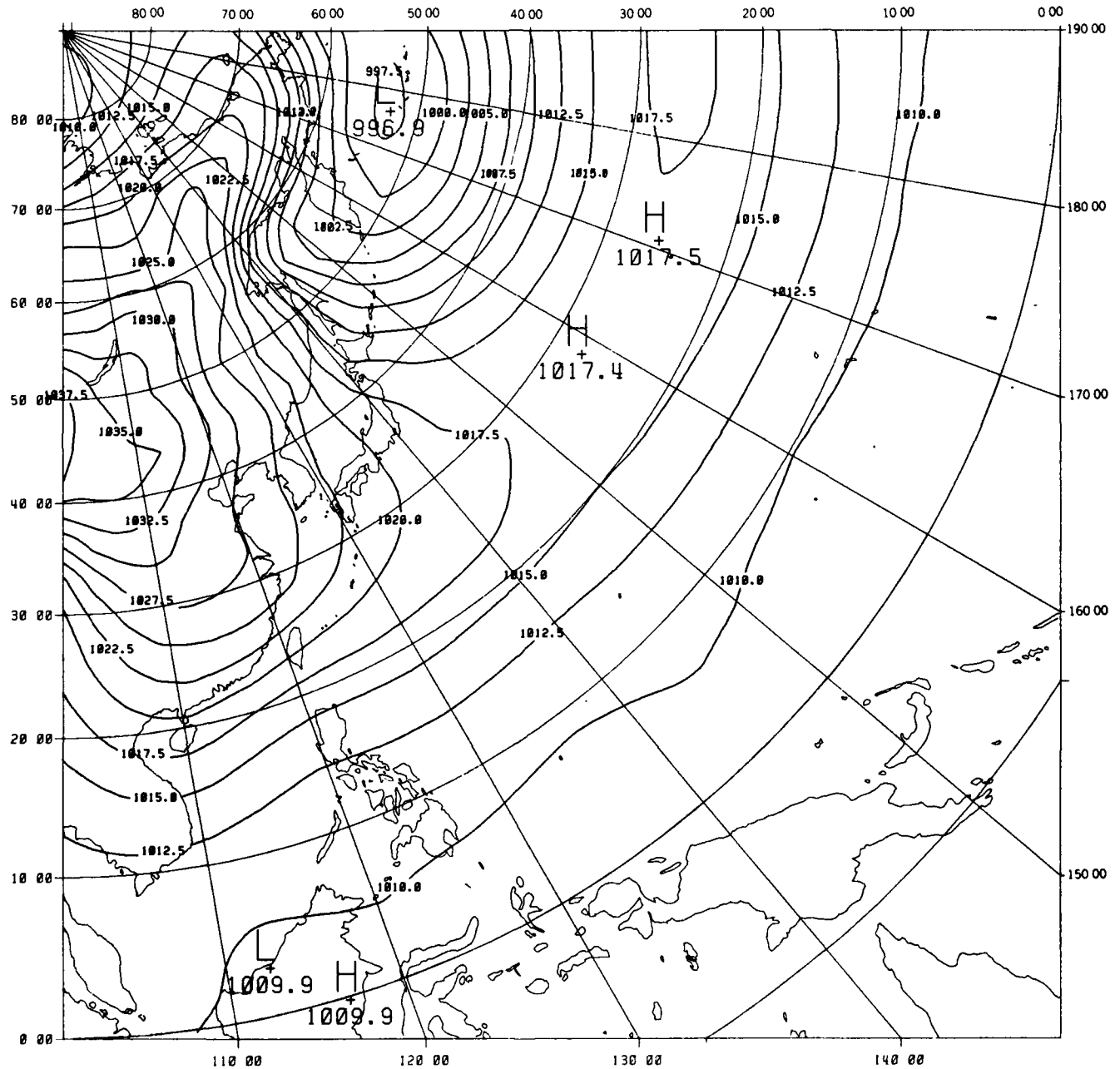
FIGURE A-93



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
THIRD QUADRANT

DECEMBER
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

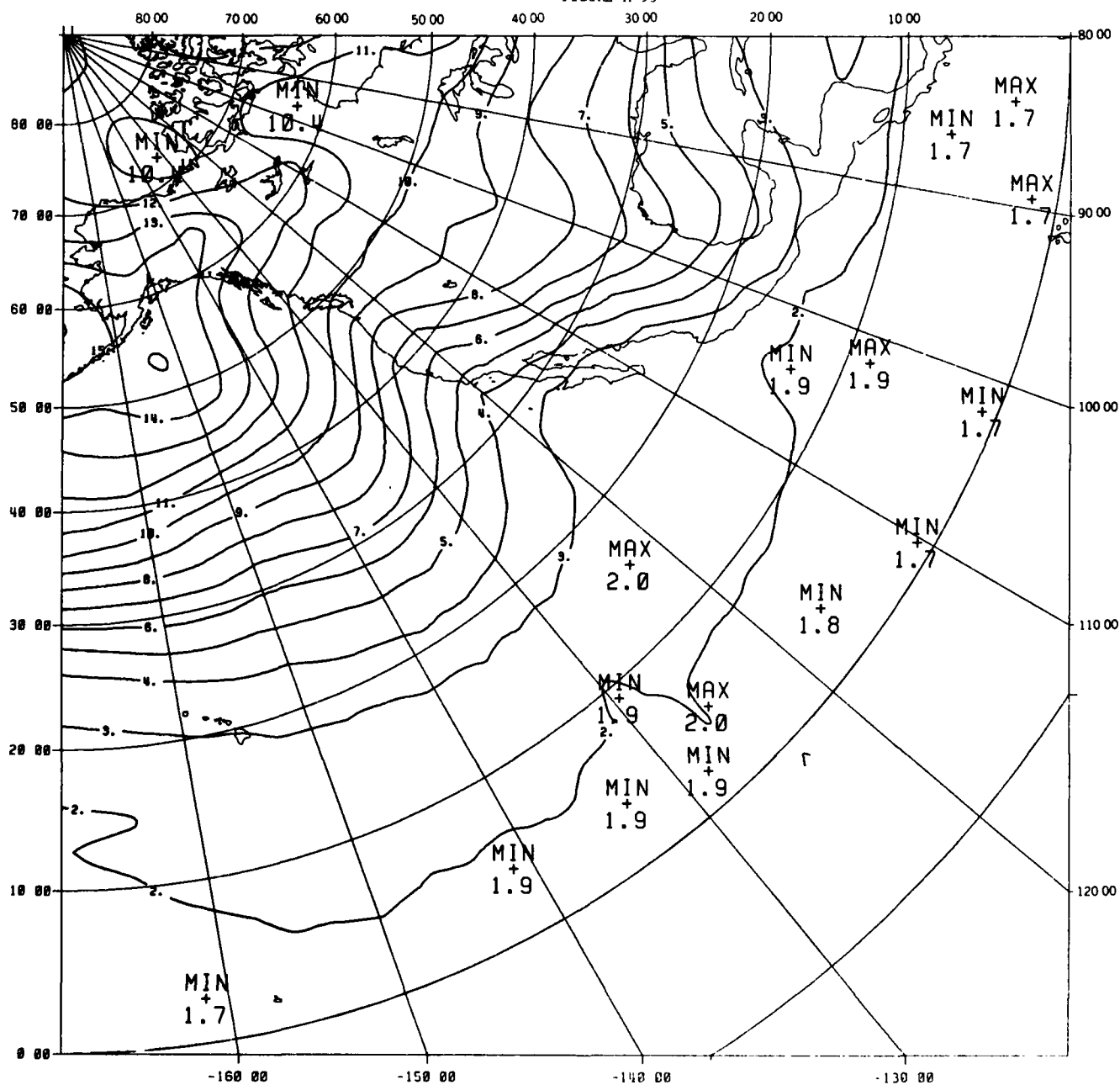
FIGURE A-94



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
THIRD QUADRANT

DECEMBER
MEAN SEA LEVEL
PRESSURE, MILLIBARS

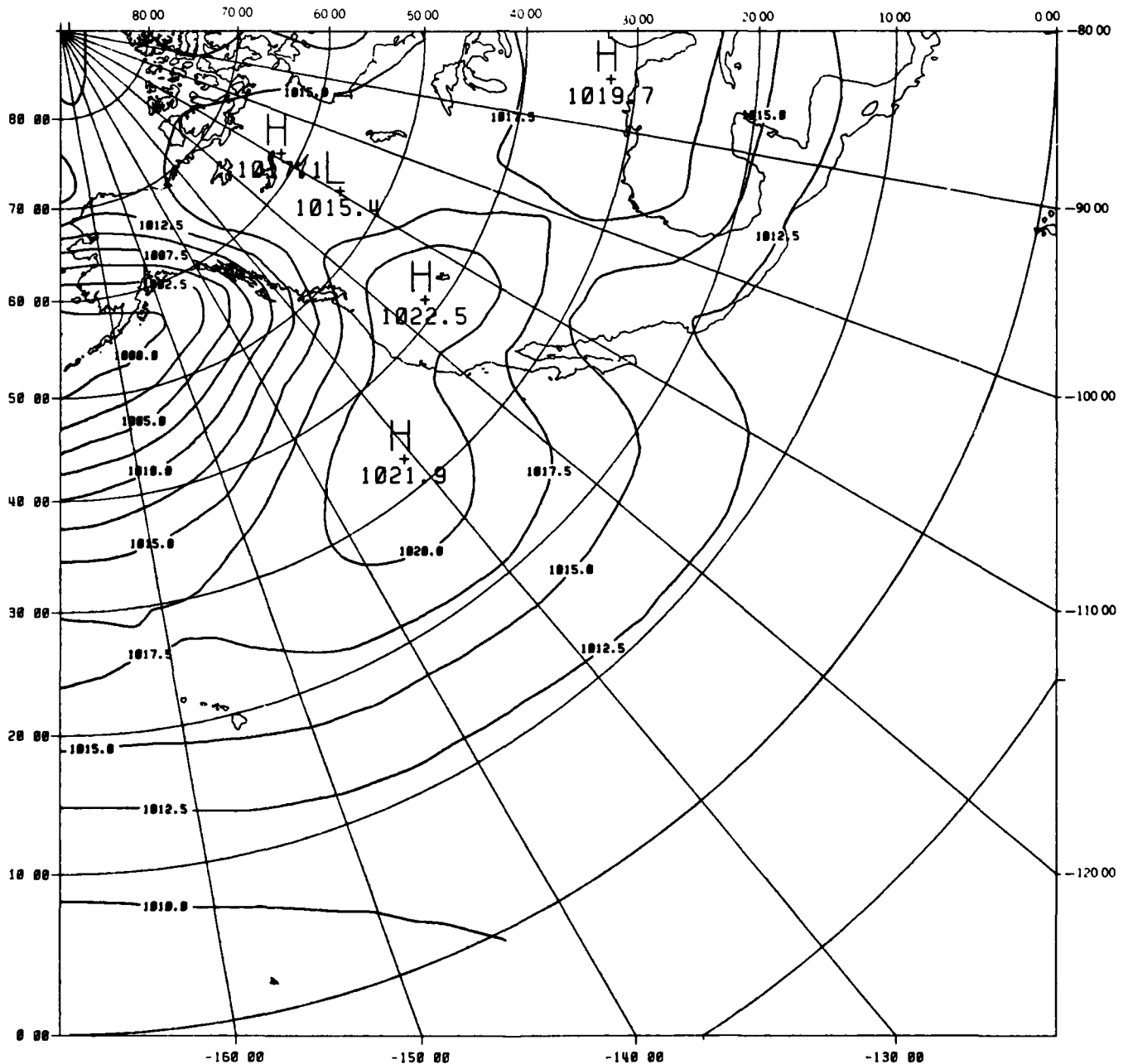
FIGURE A-95



UAIPI (POR 1973-1978)
NORTHERN HEMISPHERE
FOURTH QUADRANT

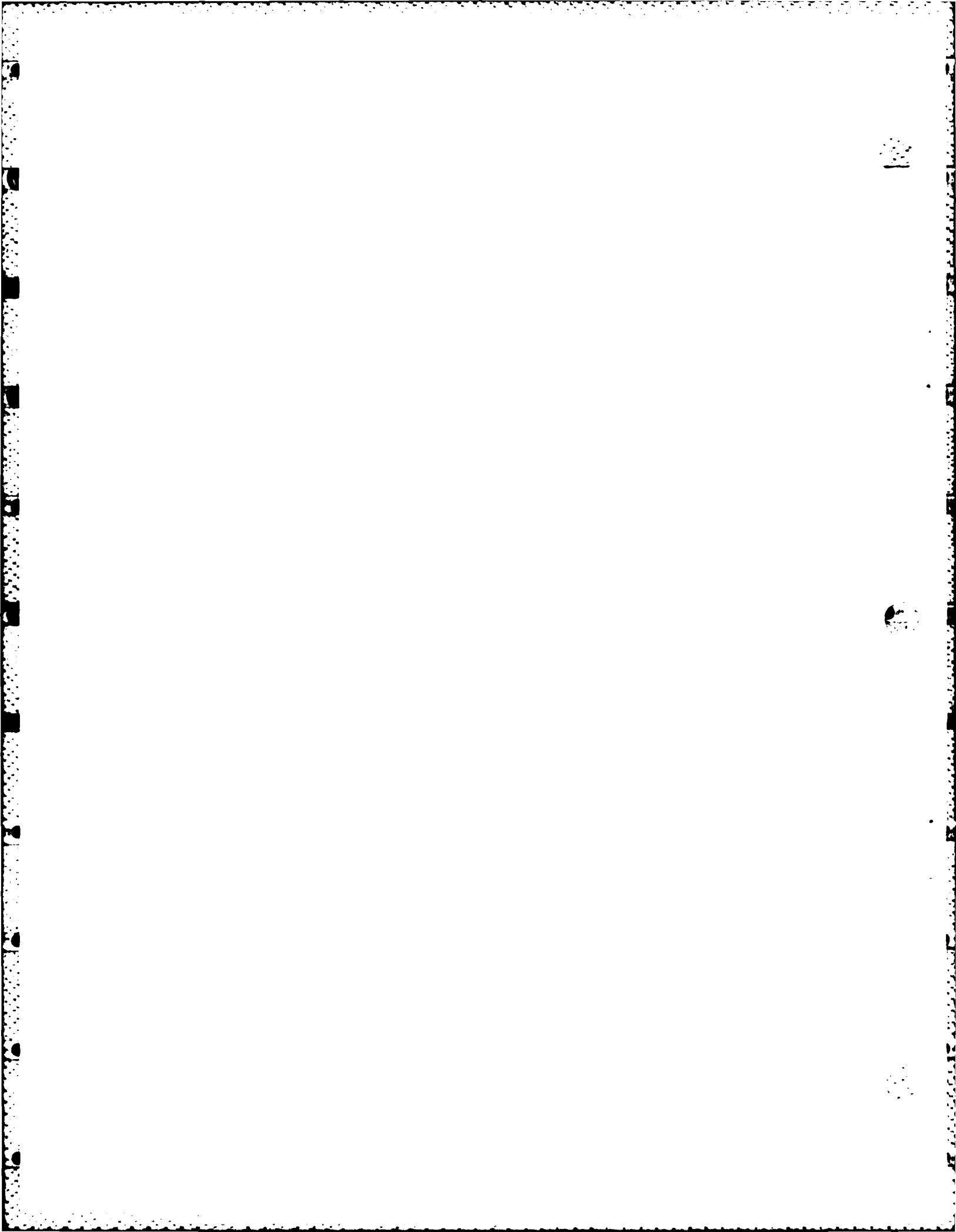
DECEMBER
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

FIGURE A-96



UAPIP (POR 1973-1978)
NORTHERN HEMISPHERE
FOURTH QUADRANT

DECEMBER
MEAN SEA LEVEL
PRESSURE, MILLIBARS

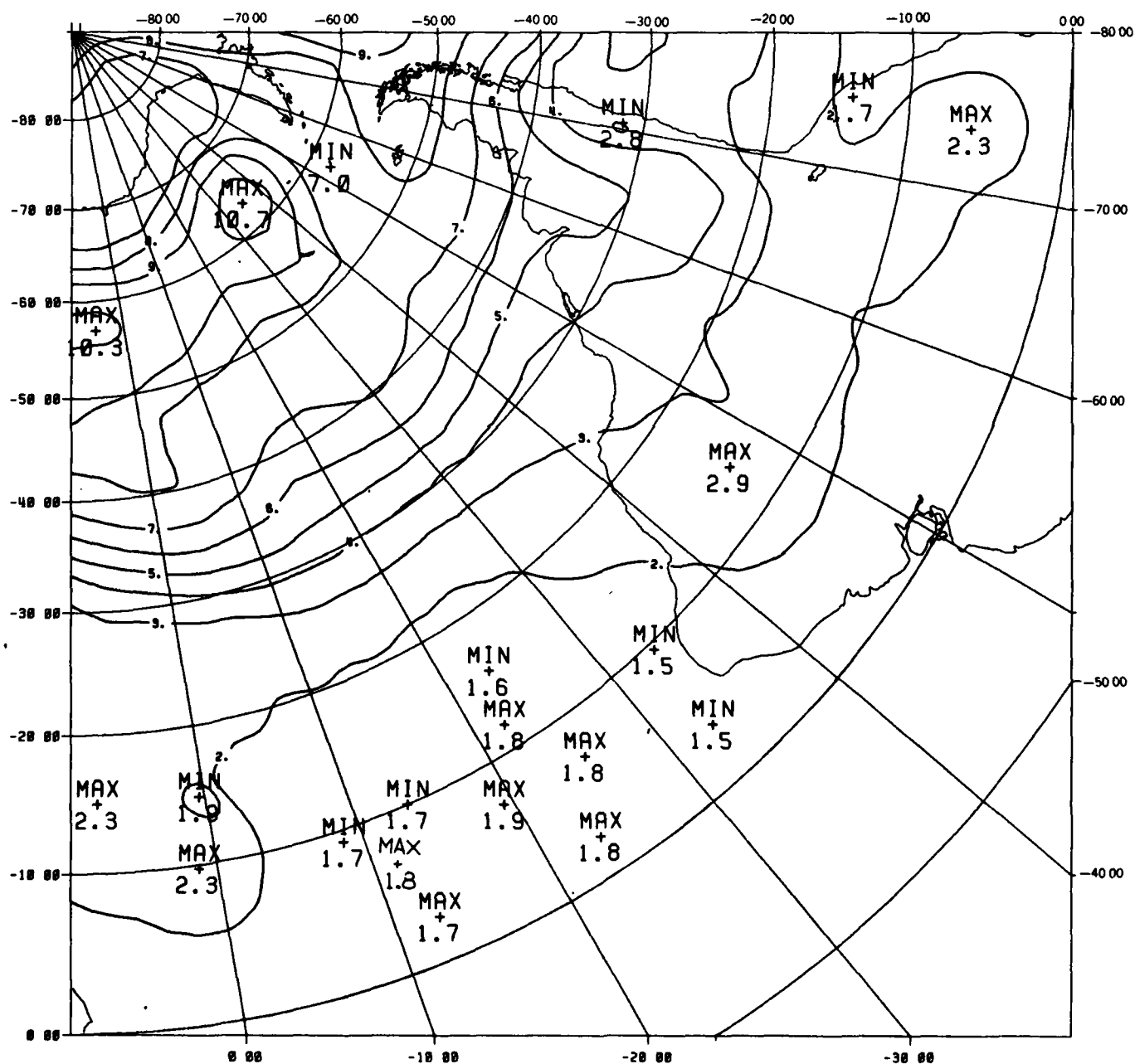


APPENDIX B

SOUTHERN HEMISPHERE MAPS

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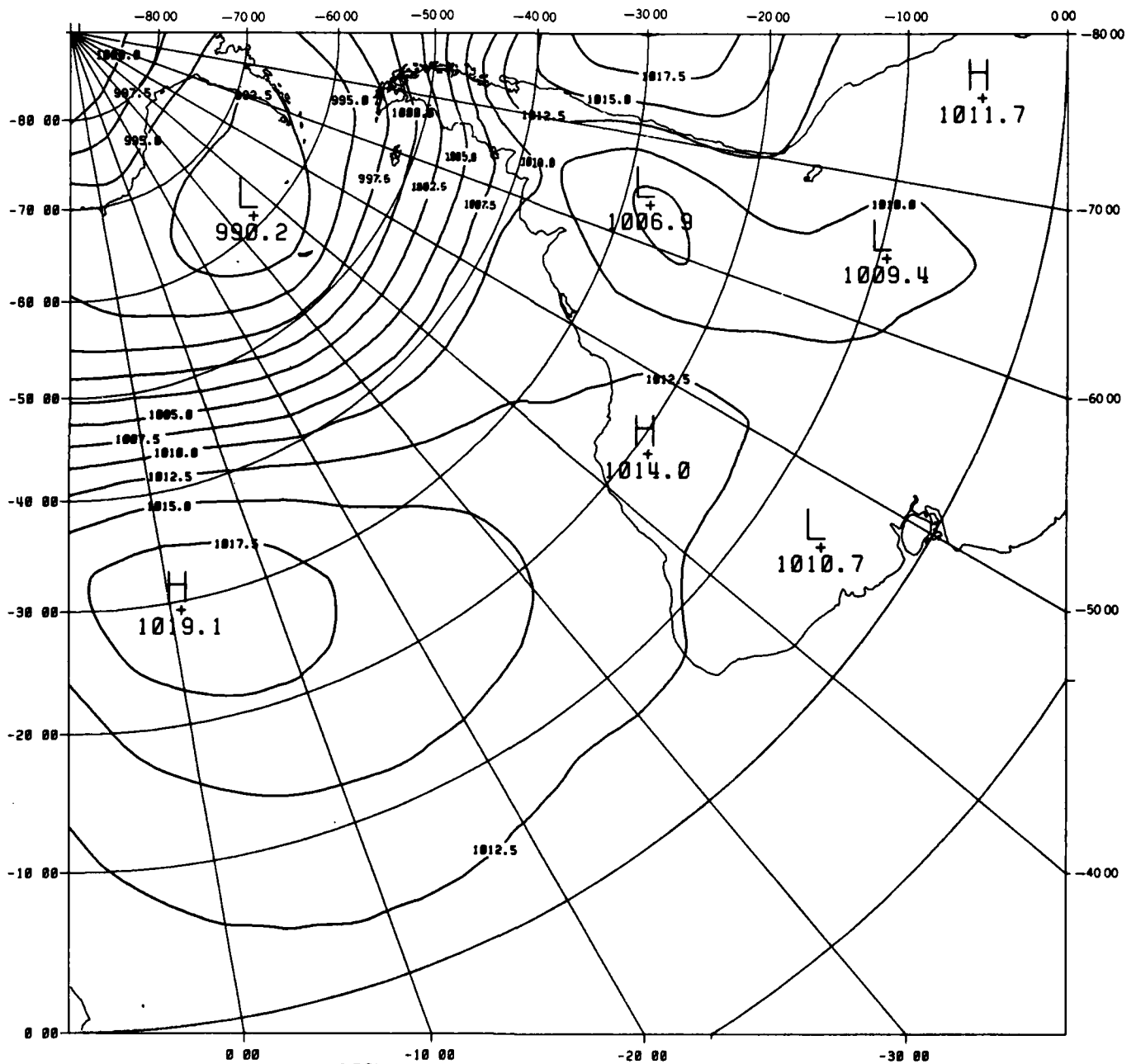
FIGURE B-1



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FIRST QUADRANT

JANUARY
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS
B-2

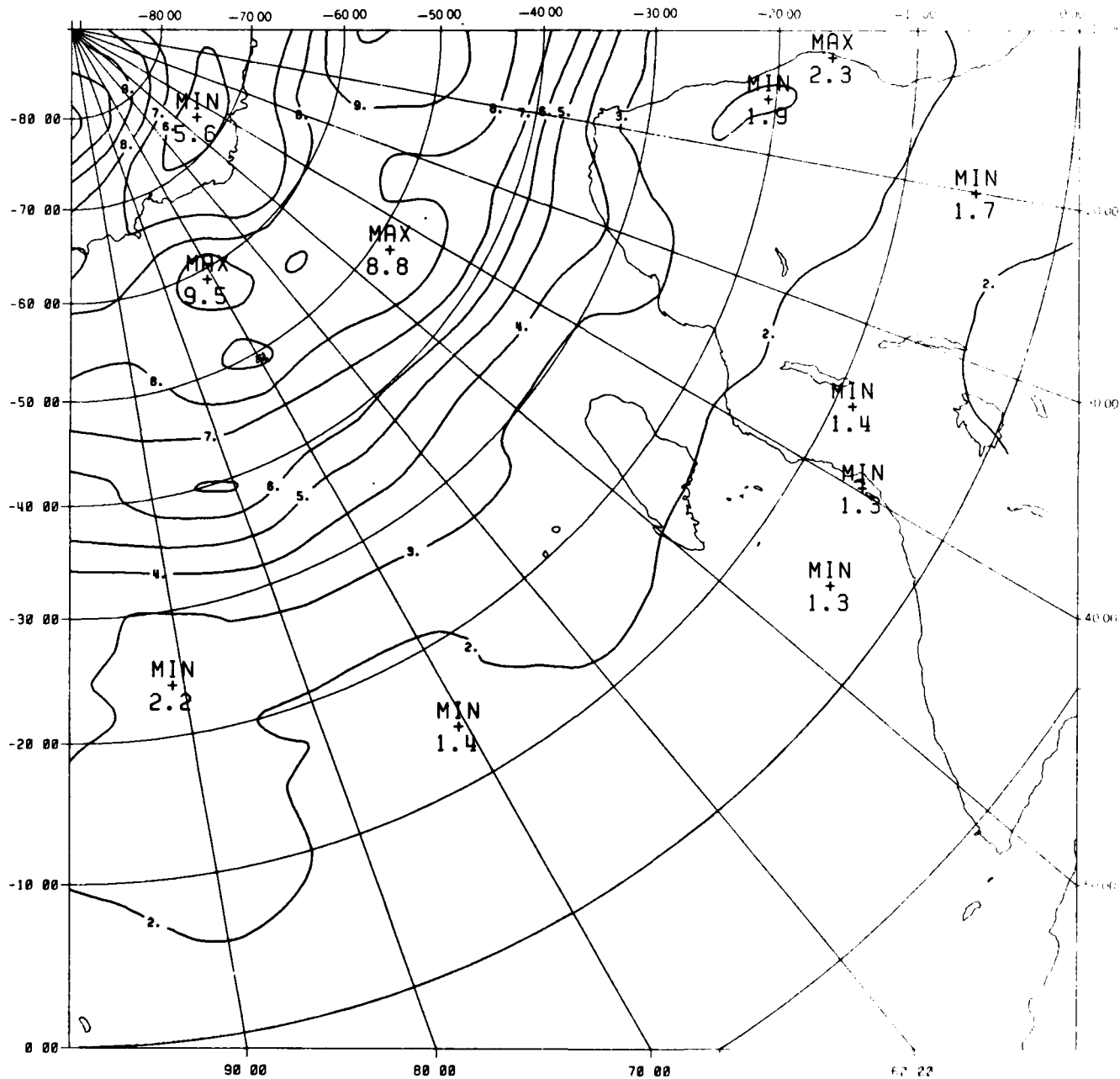
FIGURE B-2



UAPIP (FOR 1973-1978)
SOUTHERN HEMISPHERE
FIRST QUADRANT

JANUARY
MEAN SEA LEVEL
PRESSURE, MILLIBARS

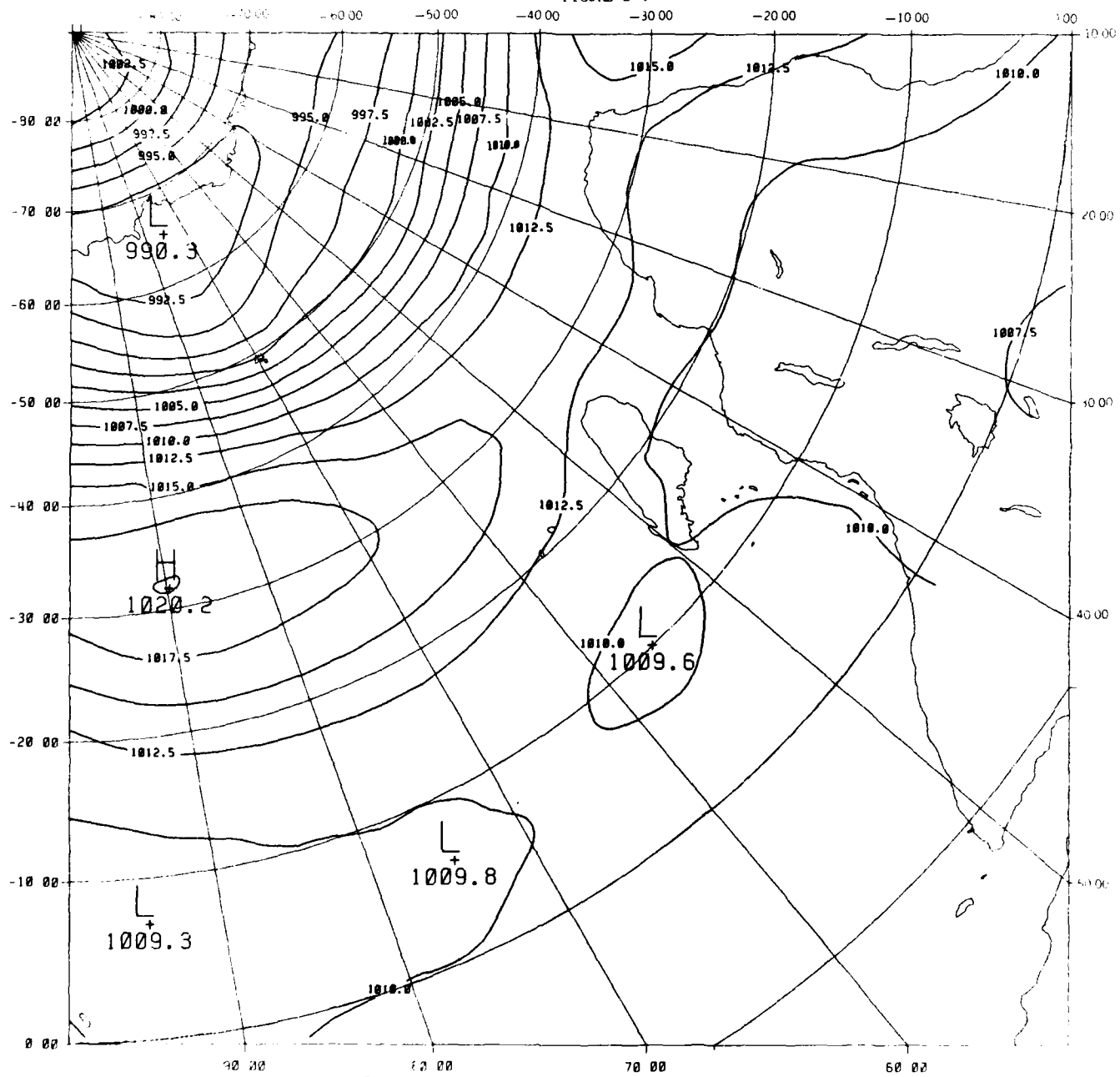
FIGURE B-3



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
SECOND QUADRANT

JANUARY
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

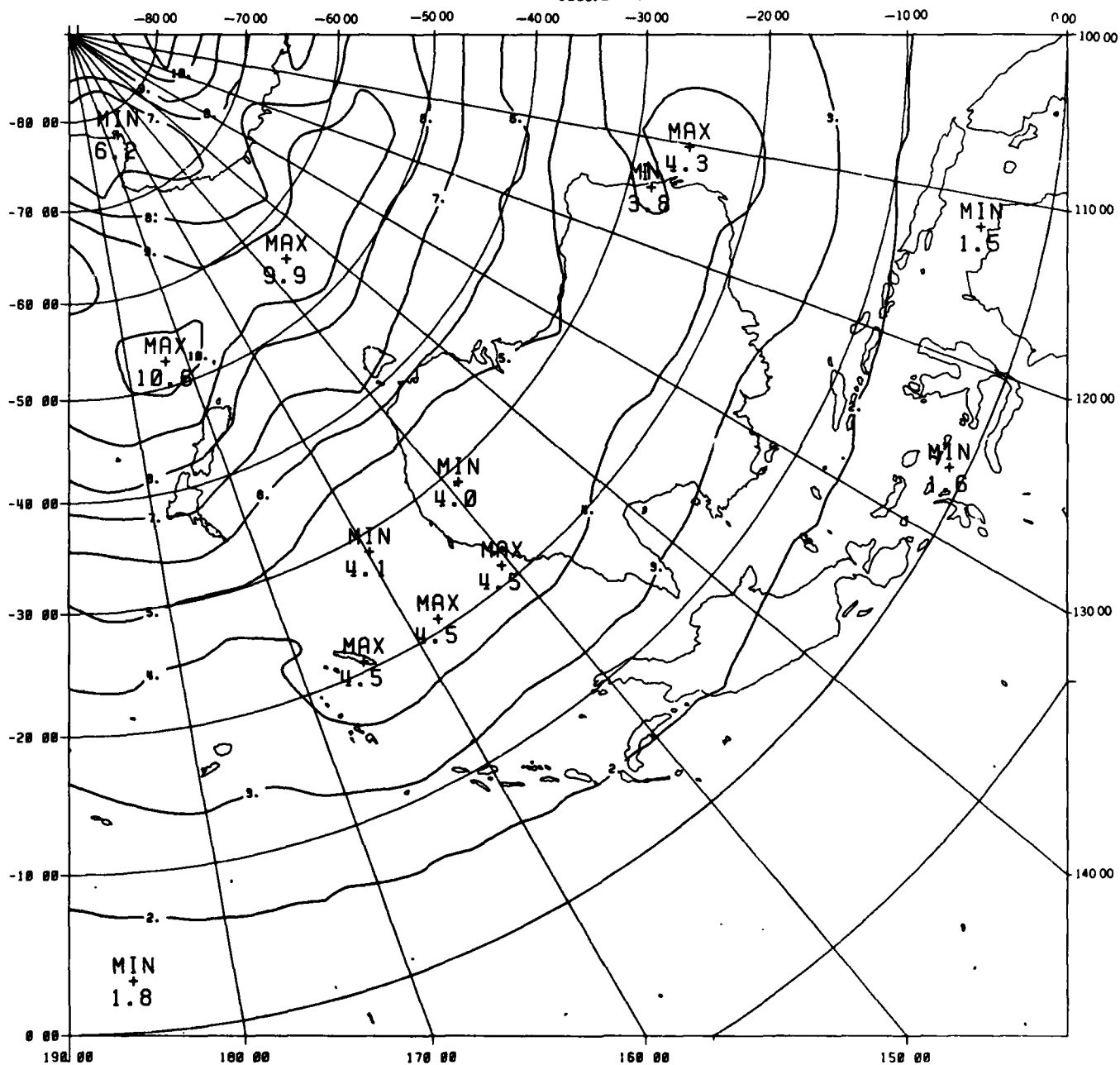
FIGURE B-4



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
SECOND QUADRANT

JANUARY
MEAN SEA LEVEL
PRESSURE, MILLIBARS

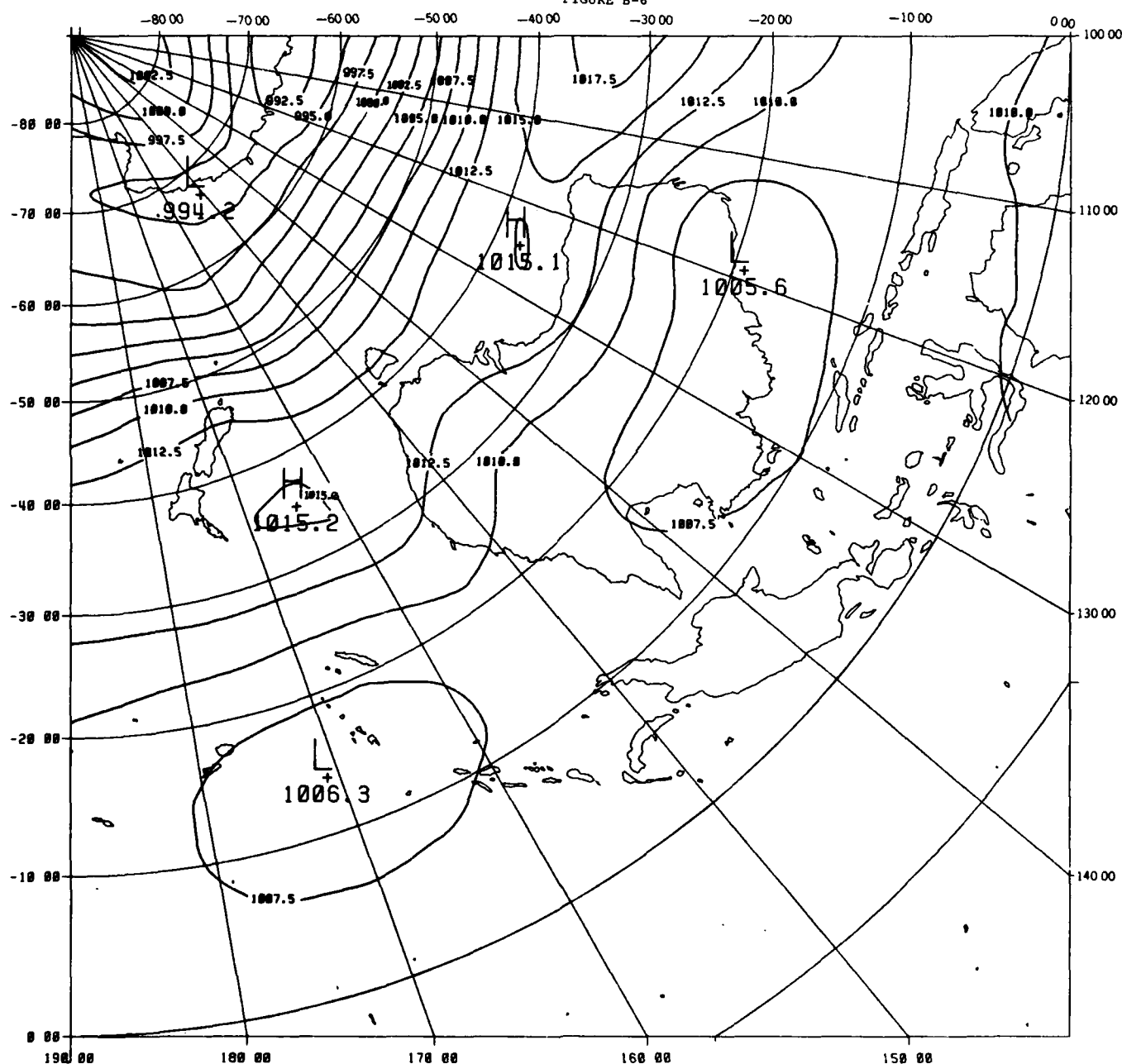
FIGURE B-5



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
THIRD QUADRANT

JANUARY
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

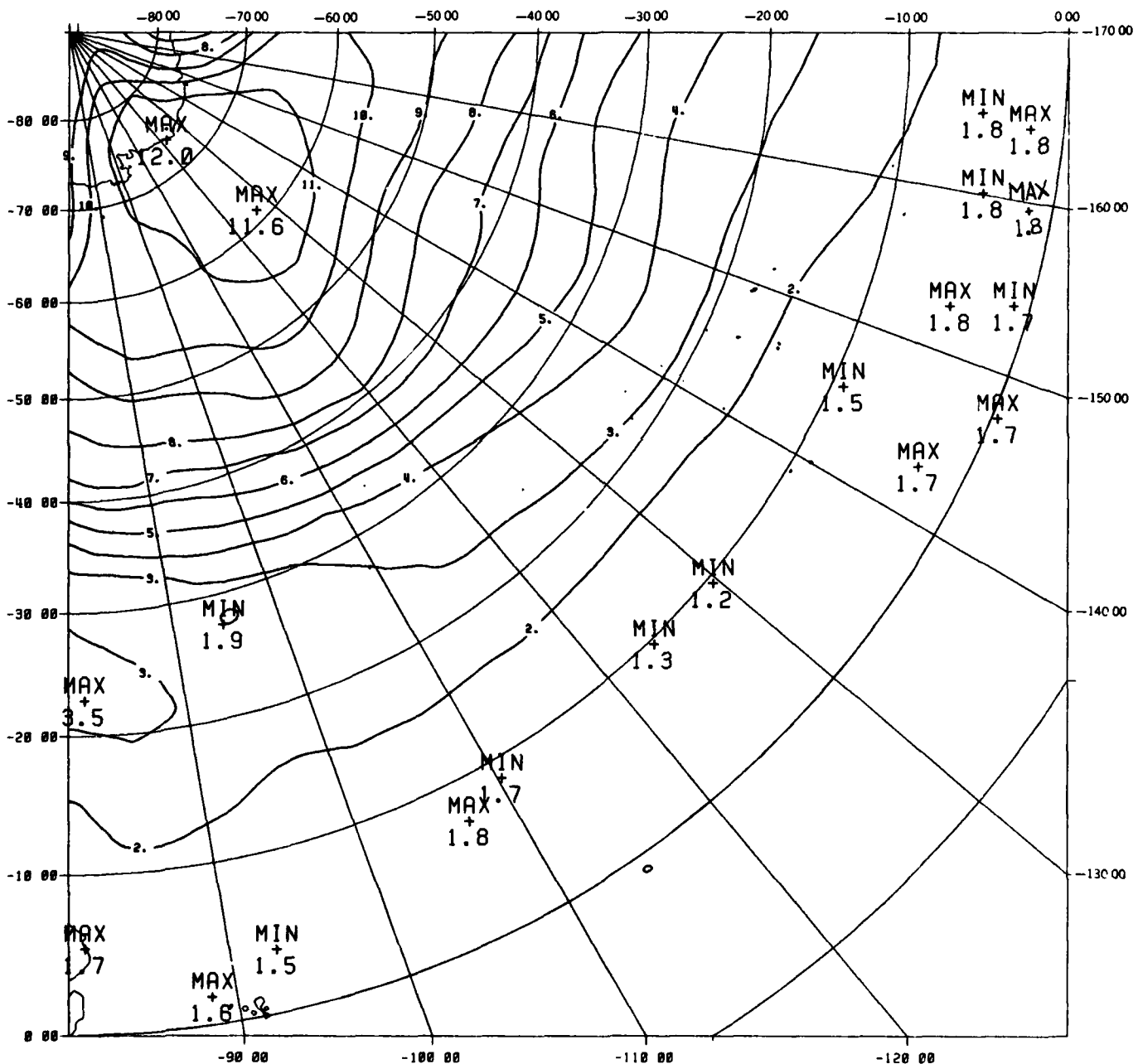
FIGURE B-6



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
THIRD QUADRANT

JANUARY
MEAN SEA LEVEL
PRESSURE, MILLIBARS

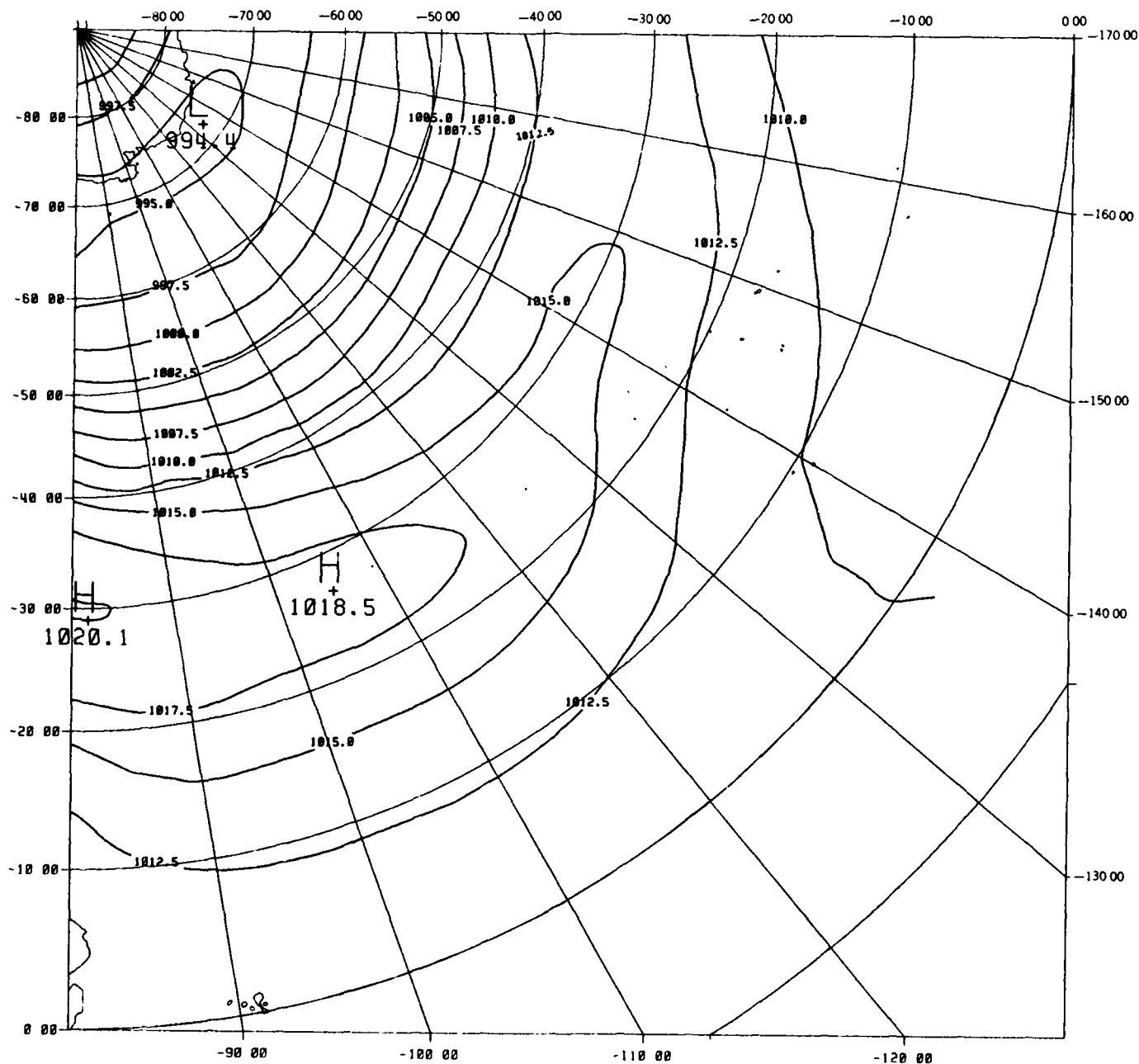
B-8



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FOURTH QUADRANT

JANUARY
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

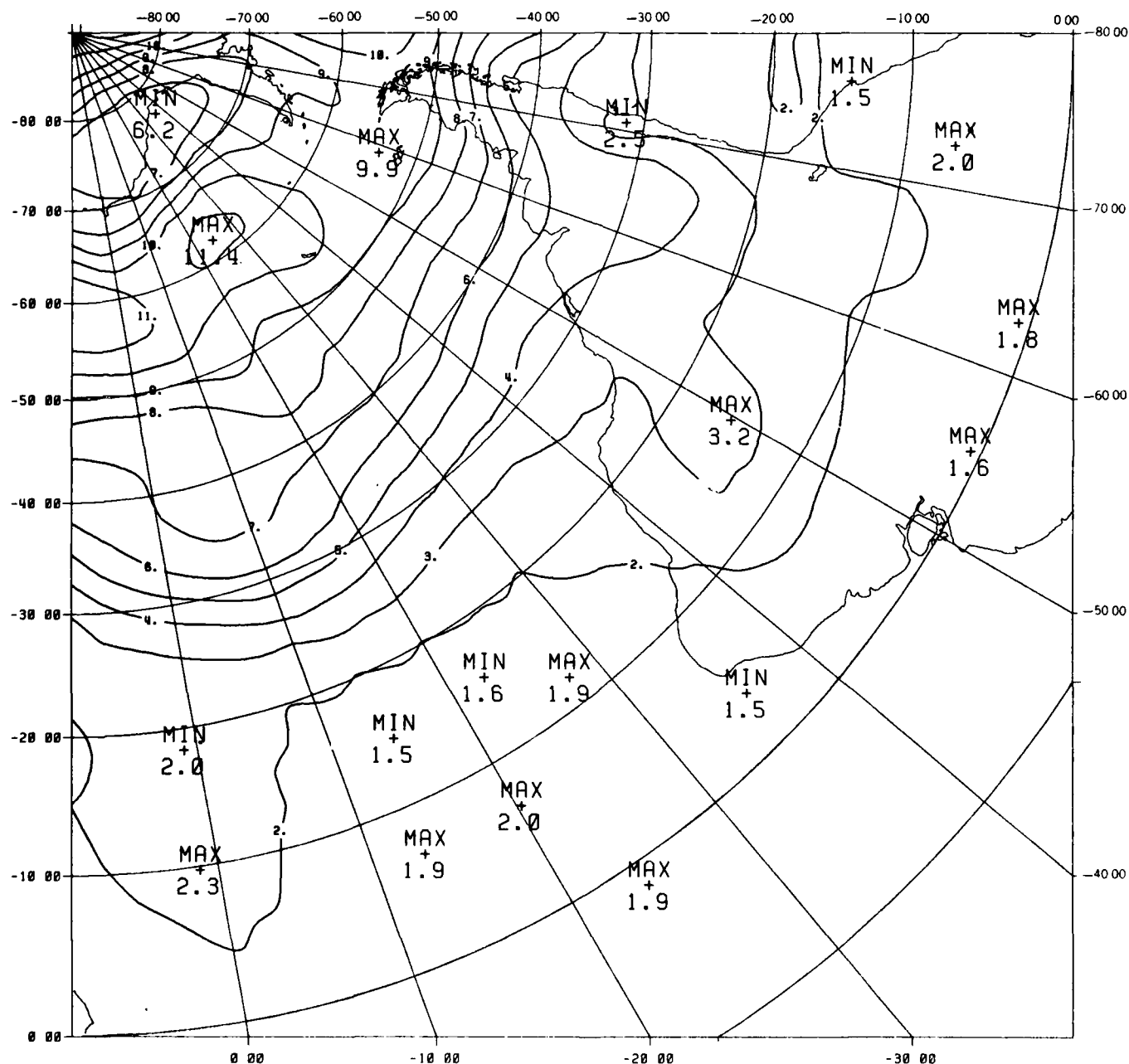
FIGURE B-8



UAIIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FOURTH QUADRANT

JANUARY
MEAN SEA LEVEL
PRESSURE, MILLIBARS

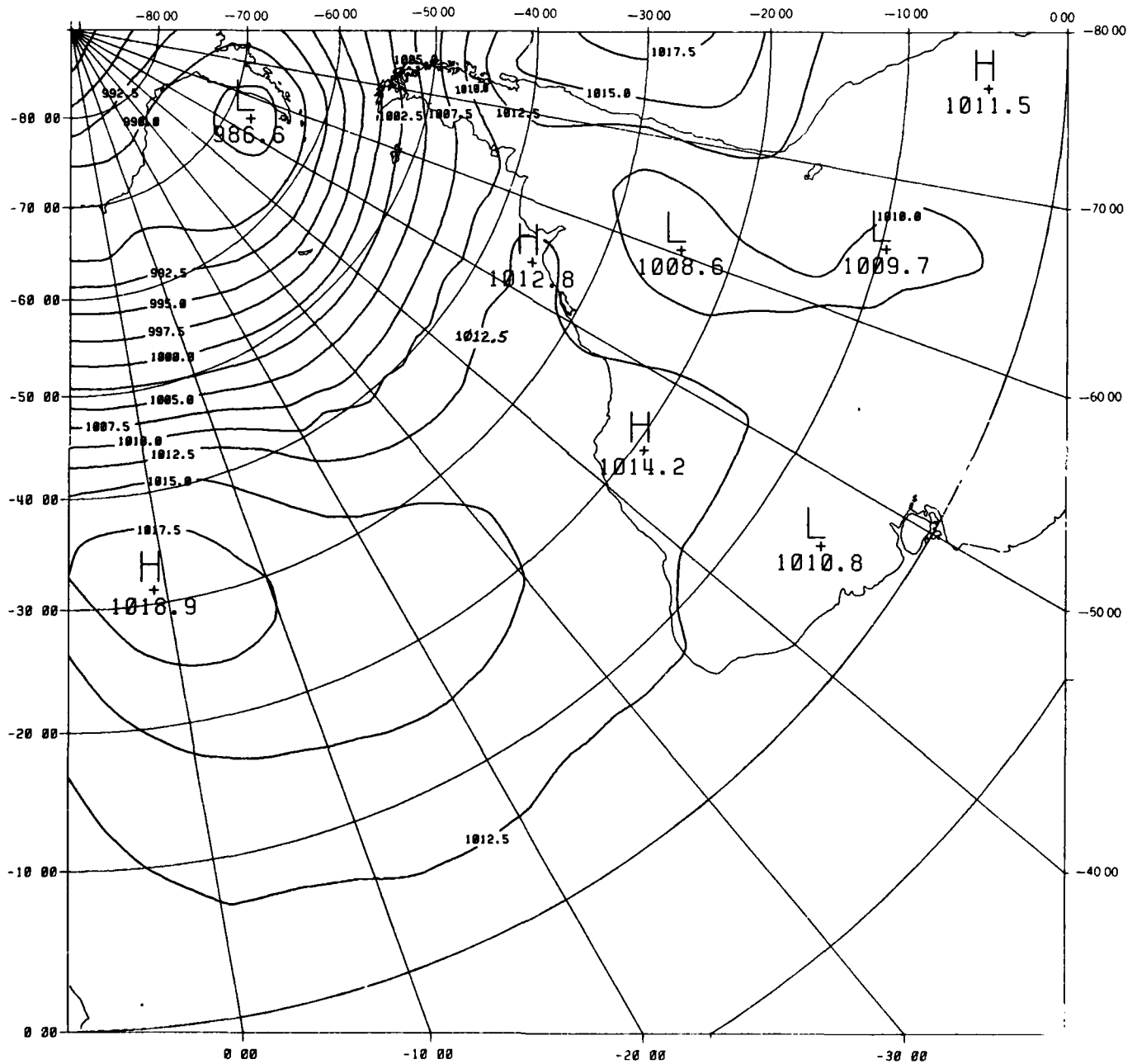
FIGURE B-9



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FIRST QUADRANT

FEBRUARY
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

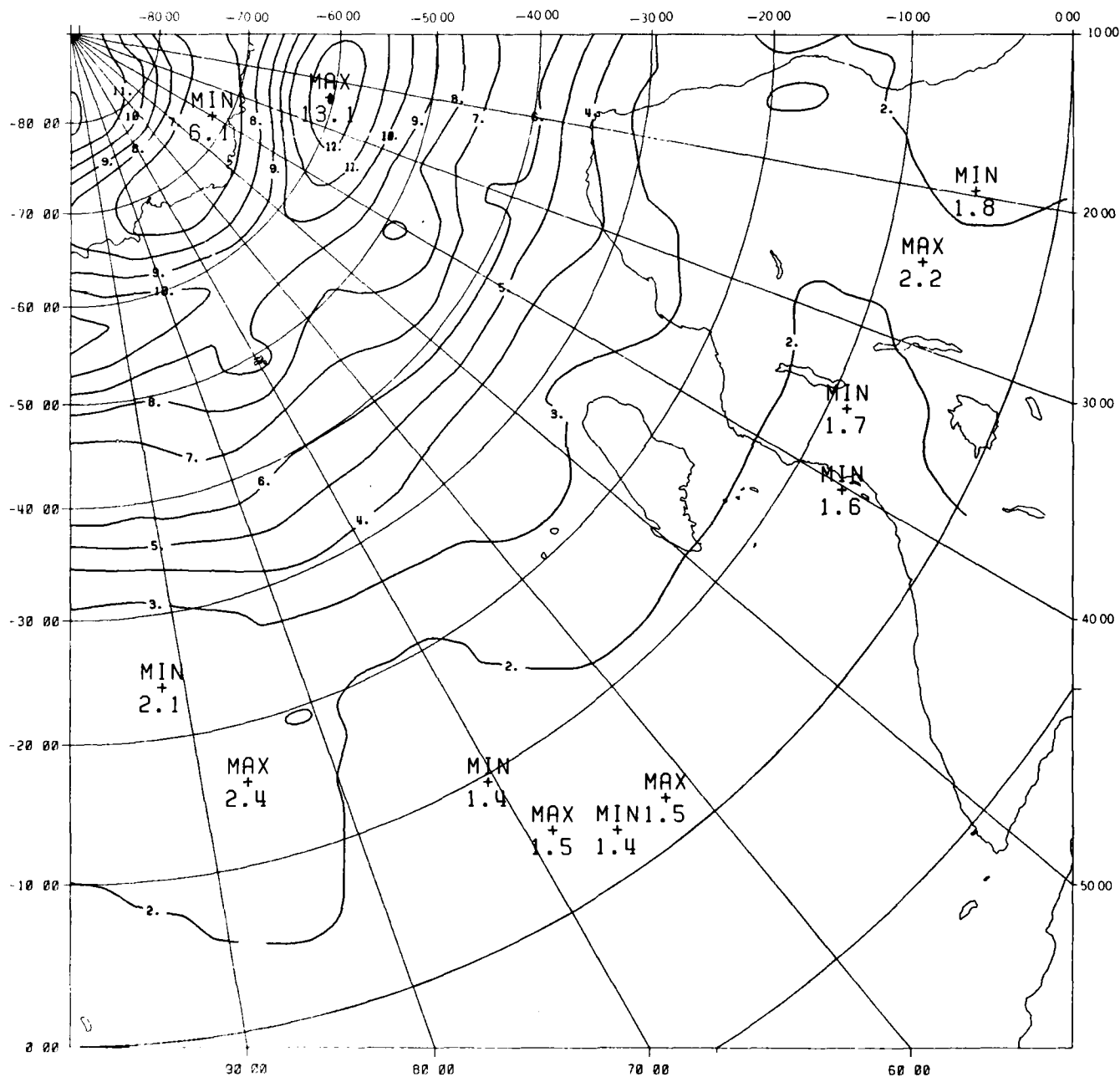
FIGURE B-10



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FIRST QUADRANT

FEBRUARY
MEAN SEA LEVEL
PRESSURE, MILLIBARS

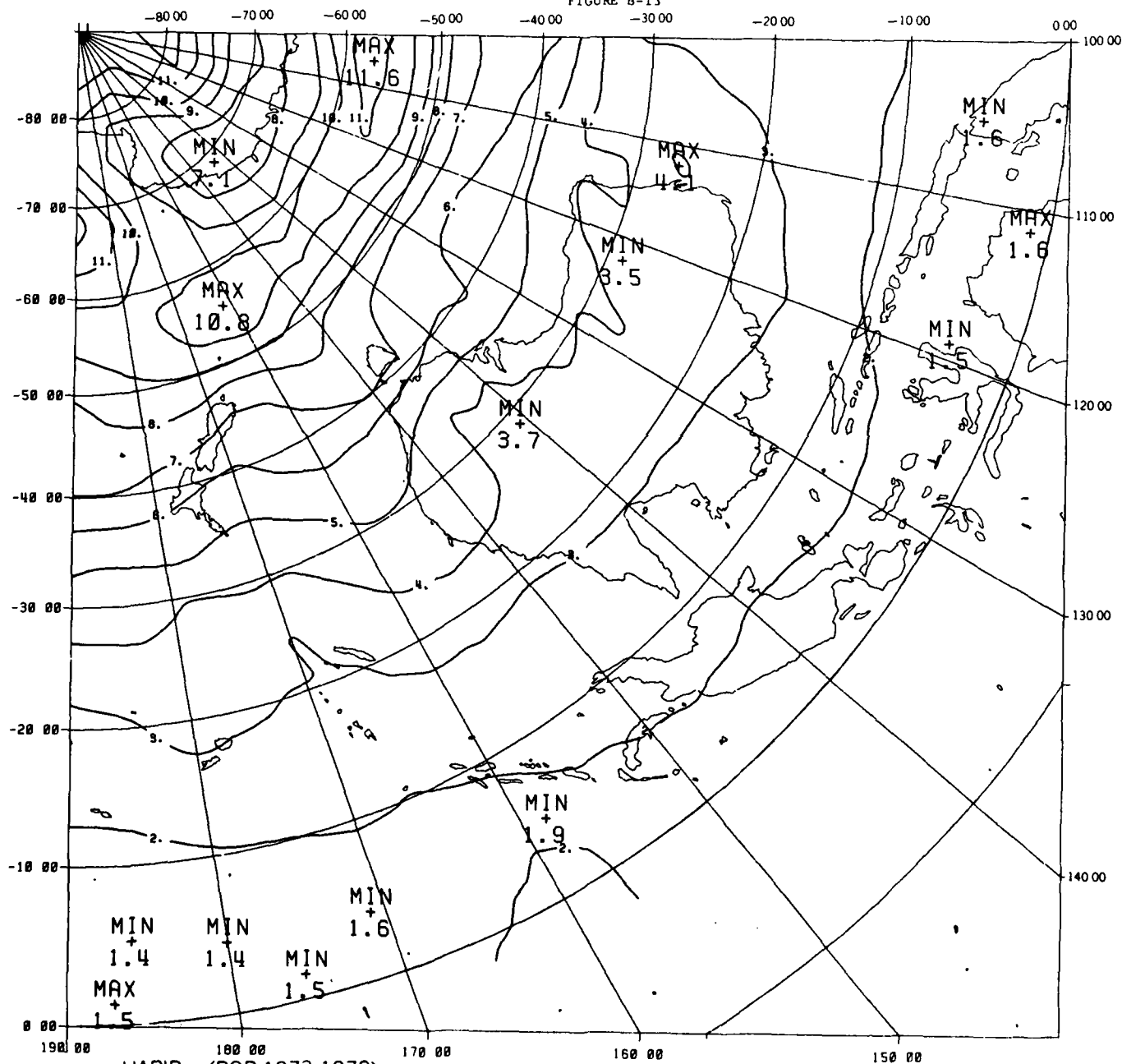
FIGURE B-11



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
SECOND QUADRANT

FEBRUARY
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

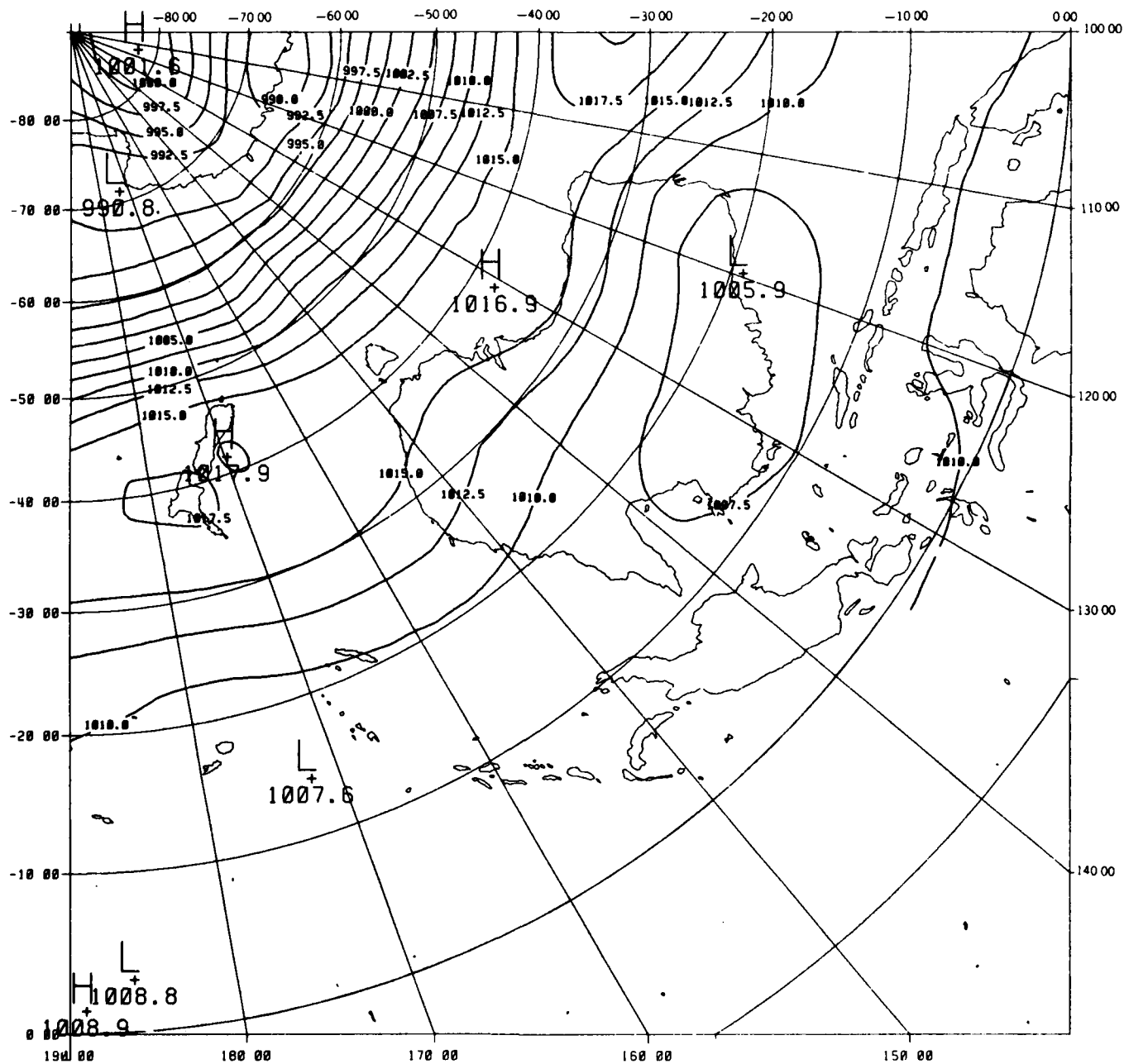
FIGURE B-13



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
THIRD QUADRANT

FEBRUARY
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

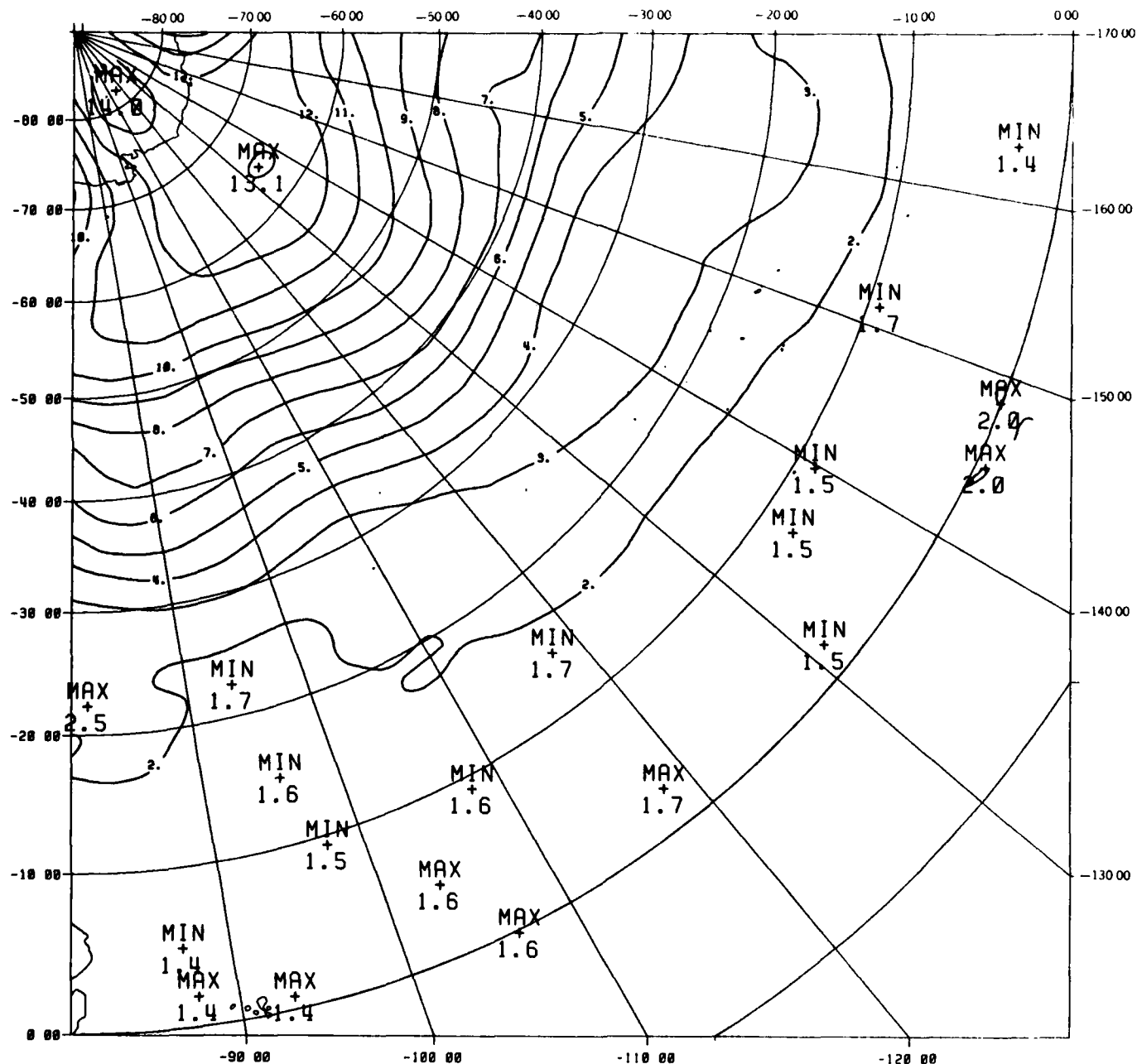
FIGURE B-14



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
THIRD QUADRANT

FEBRUARY
MEAN SEA LEVEL
PRESSURE, MILLIBARS

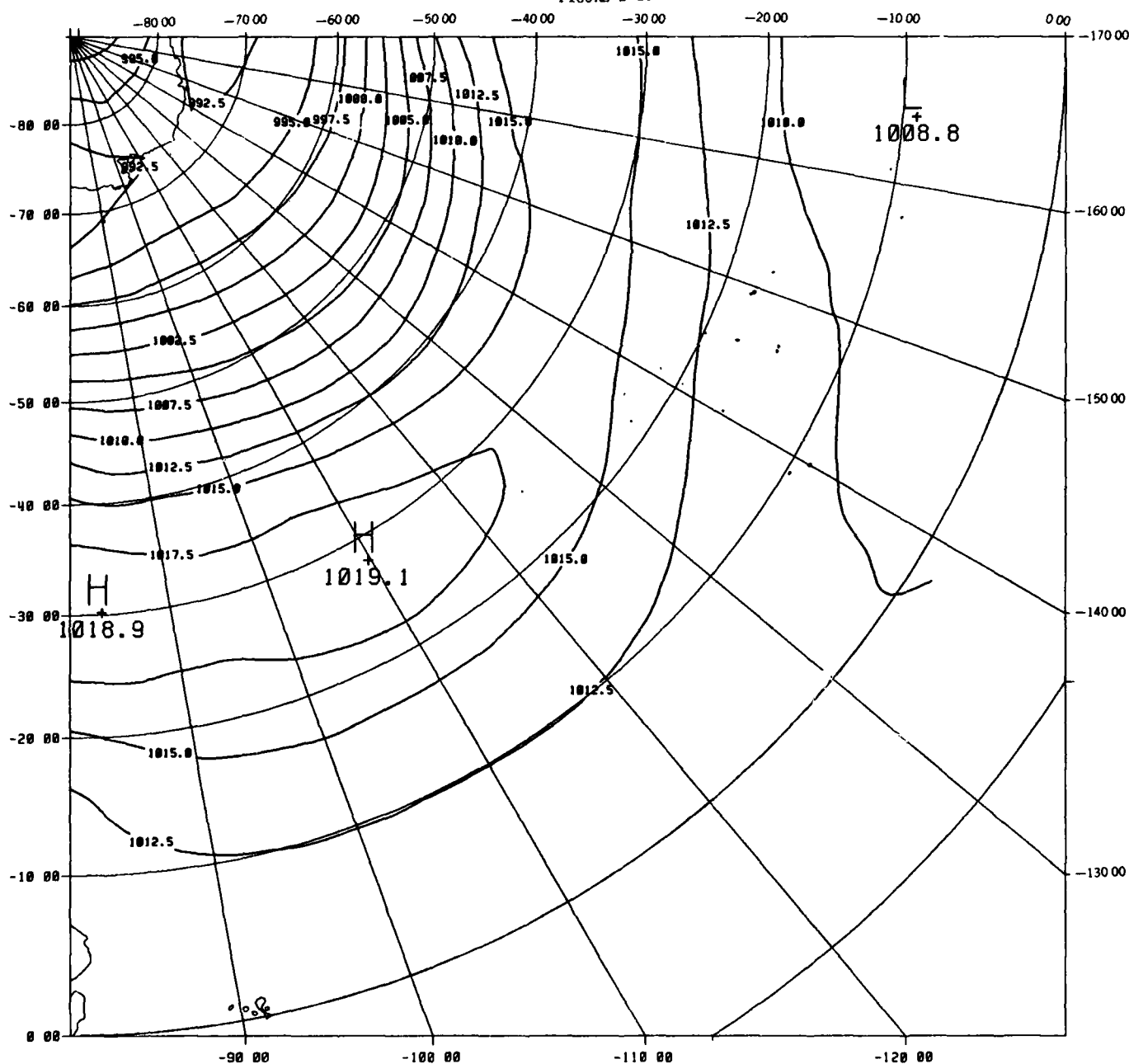
FIGURE B-15



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FOURTH QUADRANT

FEBRUARY
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

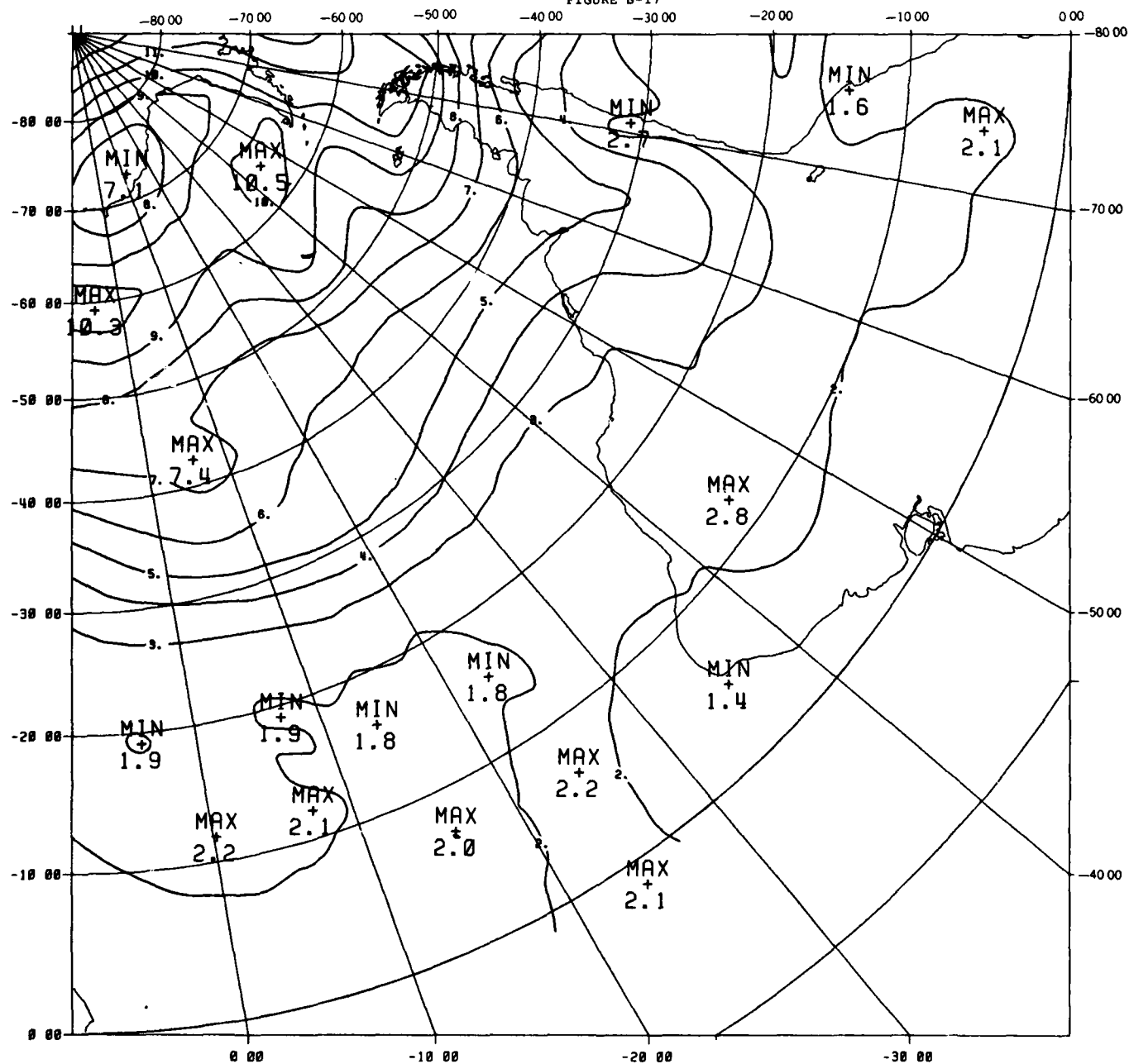
FIGURE B-16



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FOURTH QUADRANT

FEBRUARY
MEAN SEA LEVEL
PRESSURE, MILLIBARS

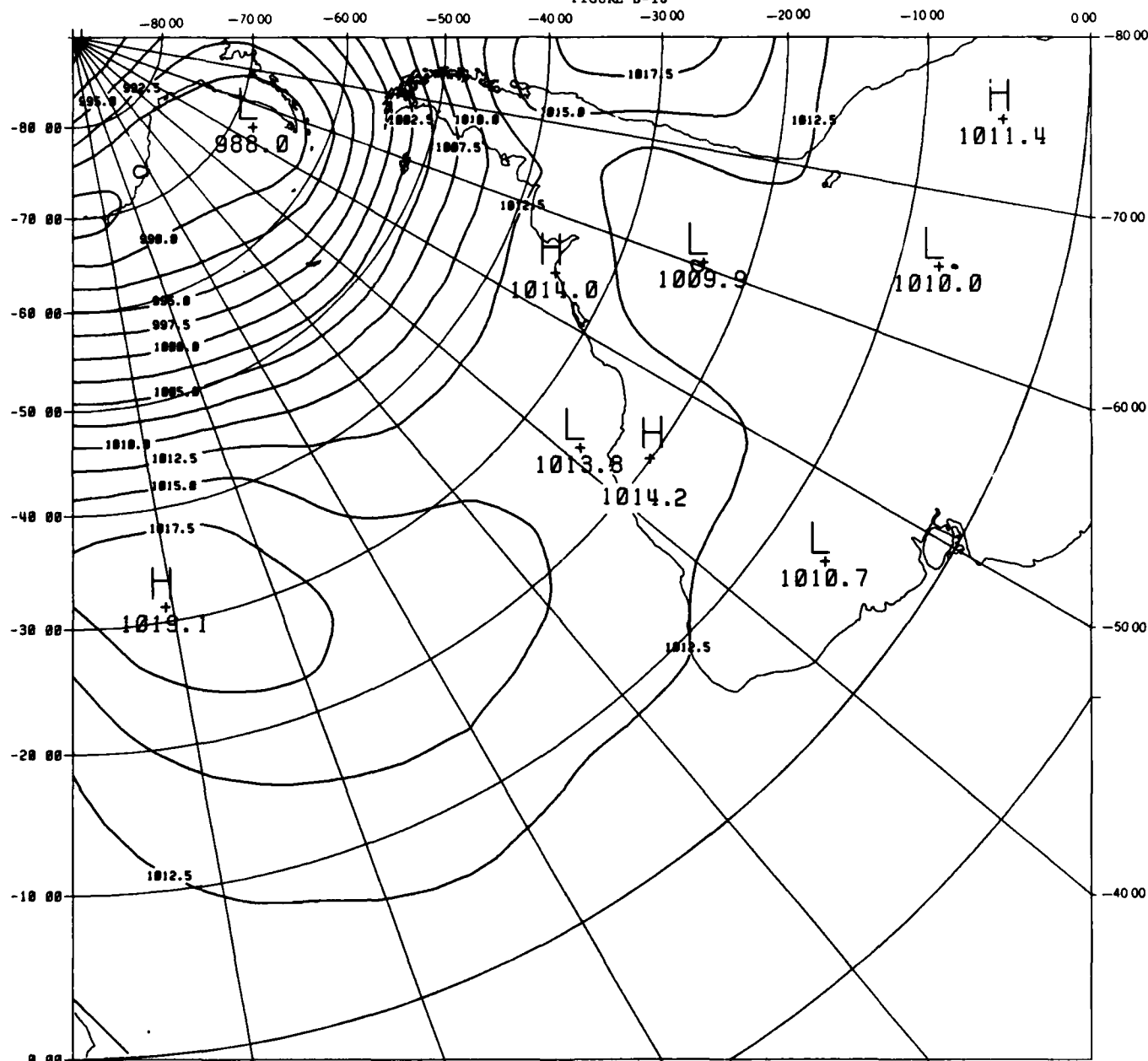
FIGURE B-17



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FIRST QUADRANT

MARCH
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

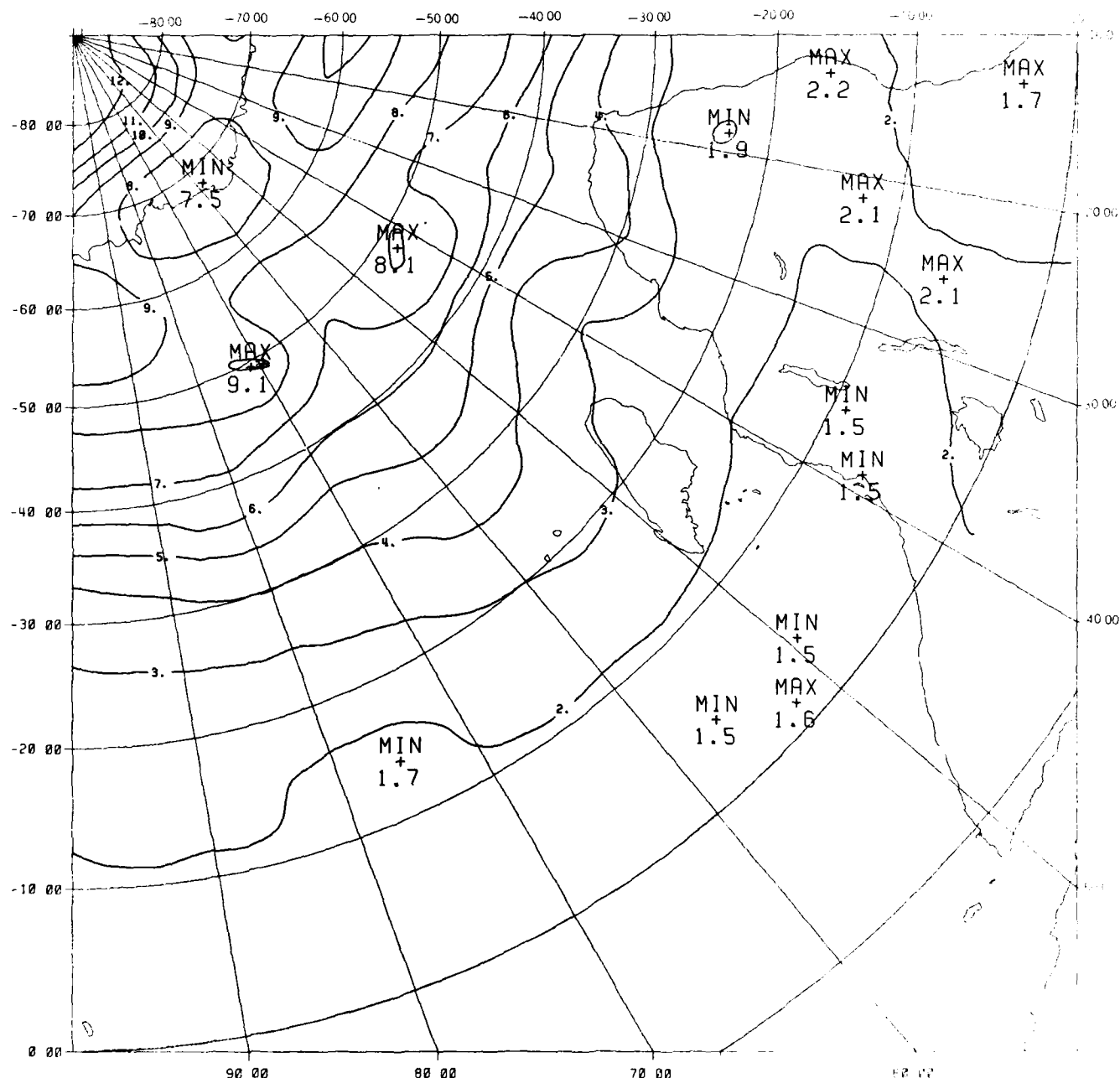
FIGURE B-18



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FIRST QUADRANT

MARCH
MEAN SEA LEVEL
PRESSURE, MILLIBARS

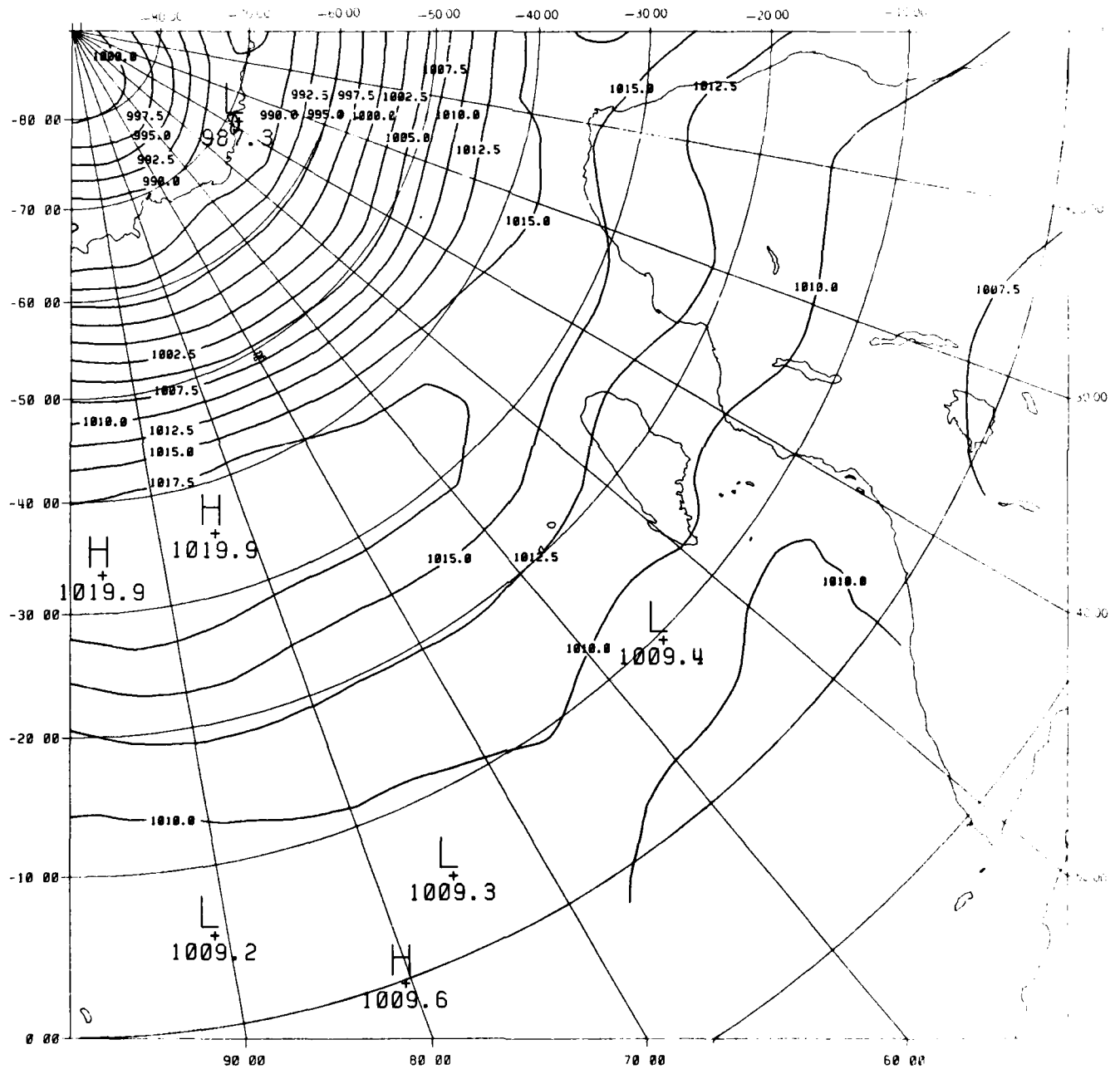
FIGURE B-19



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
SECOND QUADRANT

MARCH
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

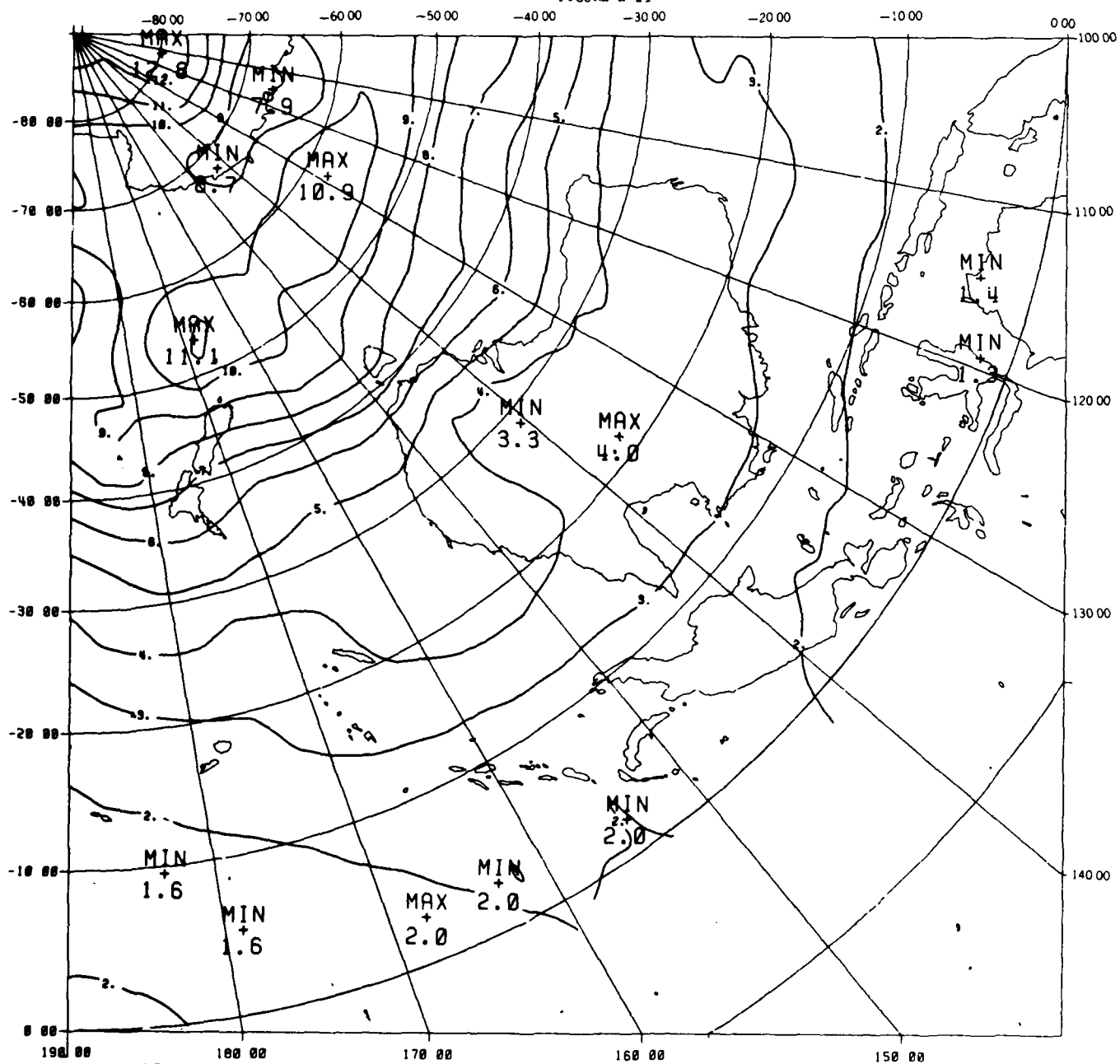
FIGURE B-20



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
SECOND QUADRANT

MARCH
MEAN SEA LEVEL
PRESSURE, MILLIBARS

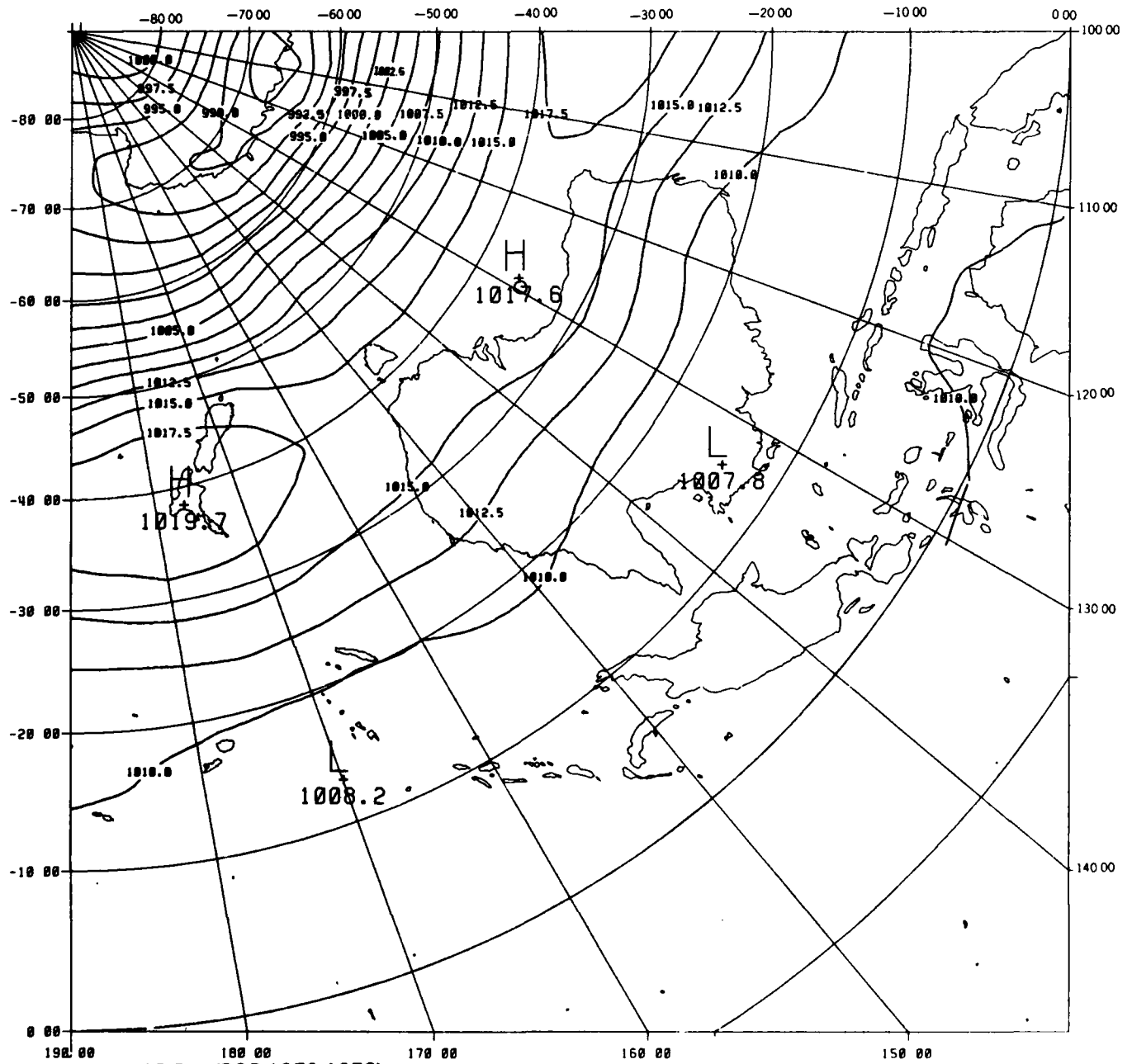
FIGURE B-21



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
THIRD QUADRANT

MARCH
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

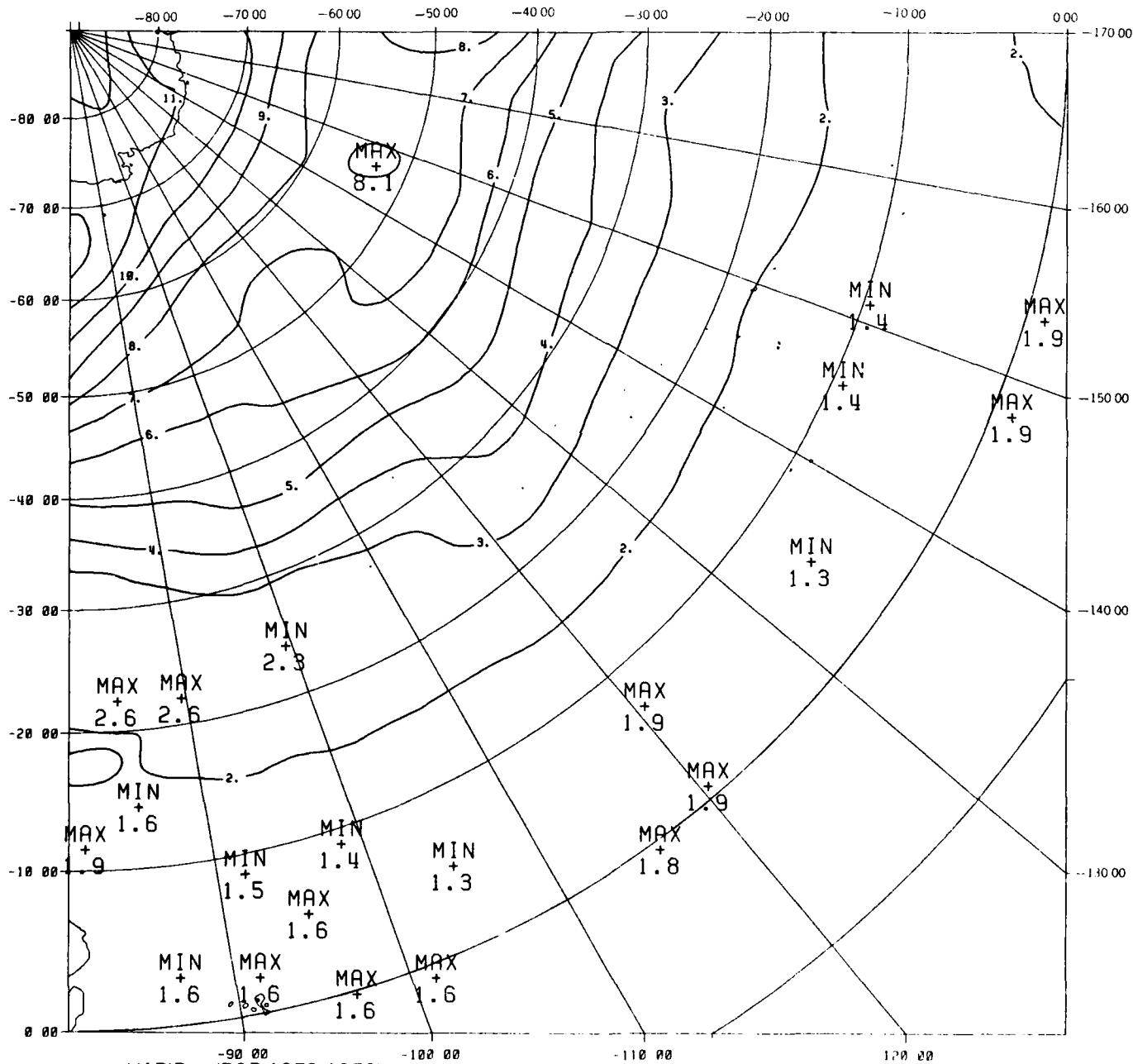
FIGURE B-22



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
THIRD QUADRANT

MARCH
MEAN SEA LEVEL
PRESSURE, MILLIBARS

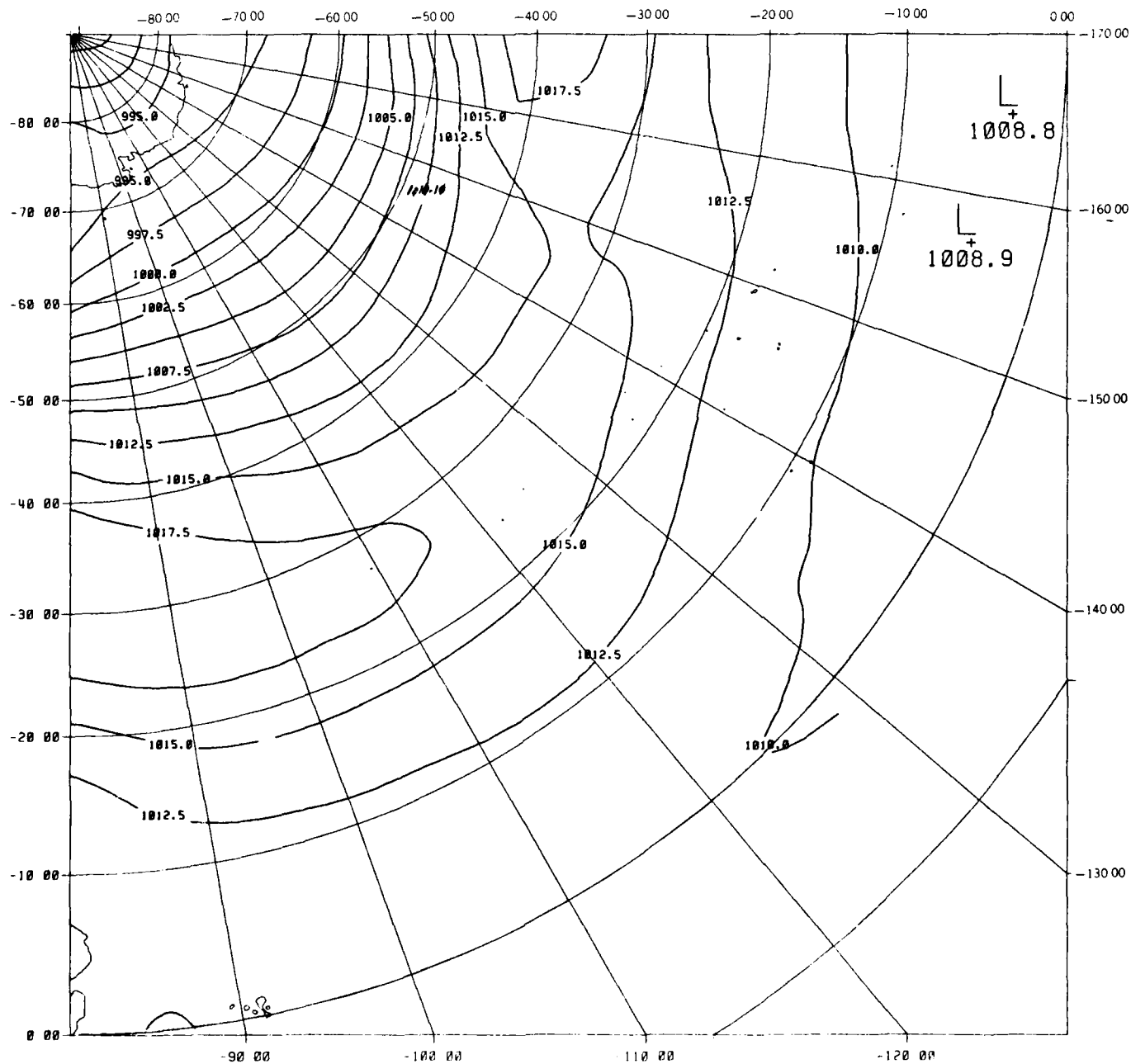
FIGURE B-23



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FOURTH QUADRANT

MARCH
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

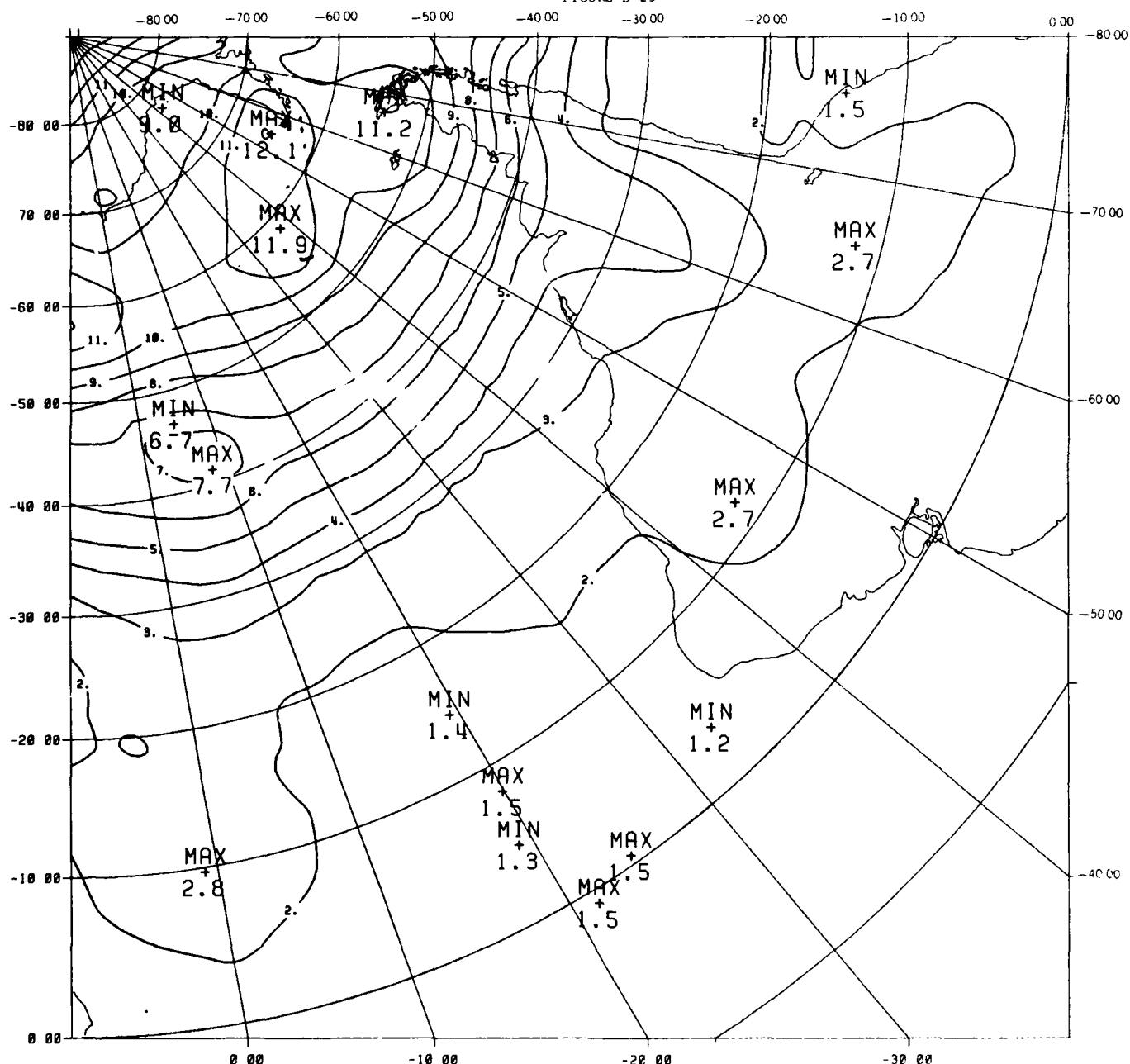
FIGURE B-24



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FOURTH QUADRANT

MARCH
MEAN SEA LEVEL
PRESSURE, MILLIBARS

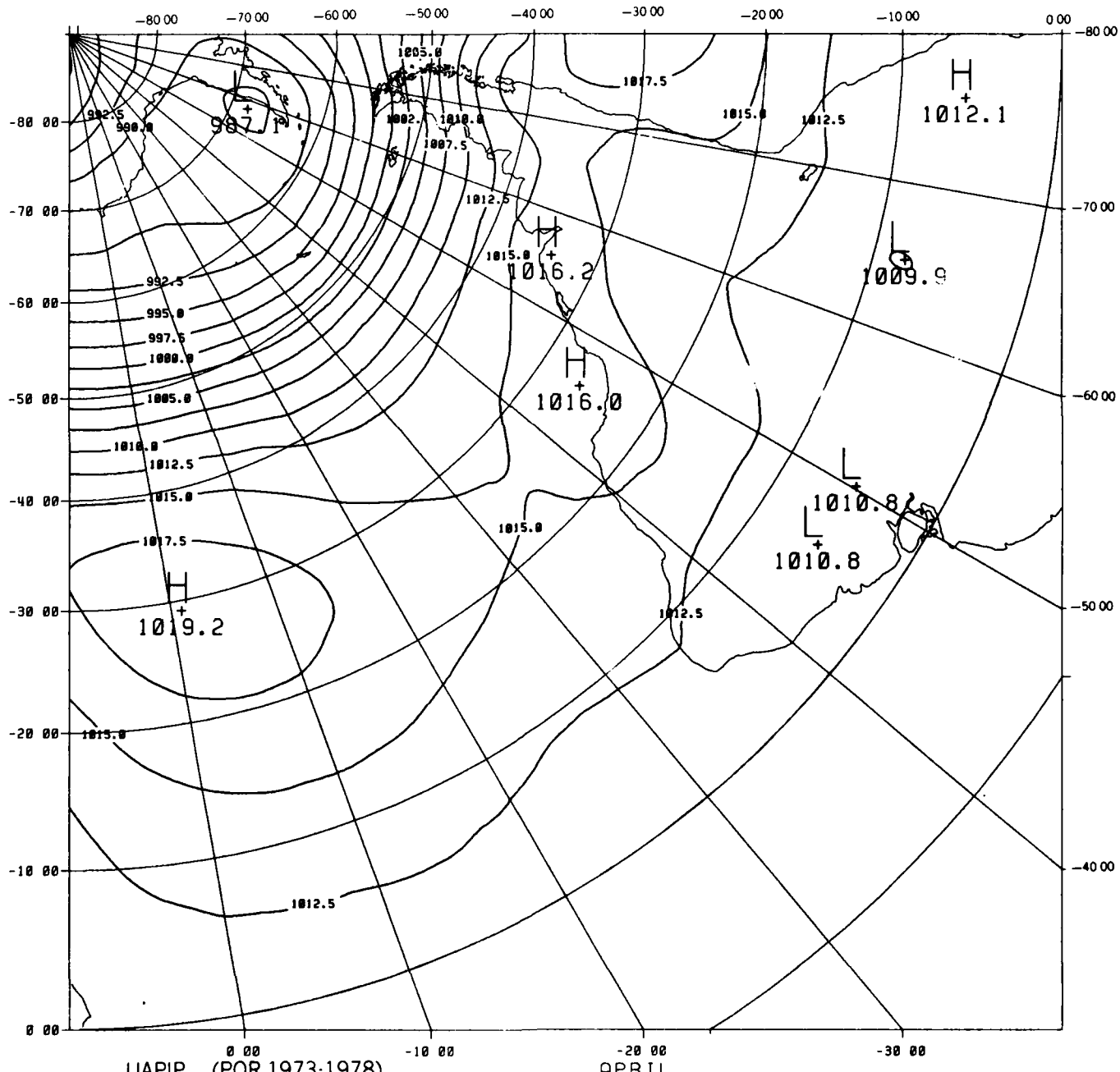
FIGURE B-25



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FIRST QUADRANT

APRIL
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

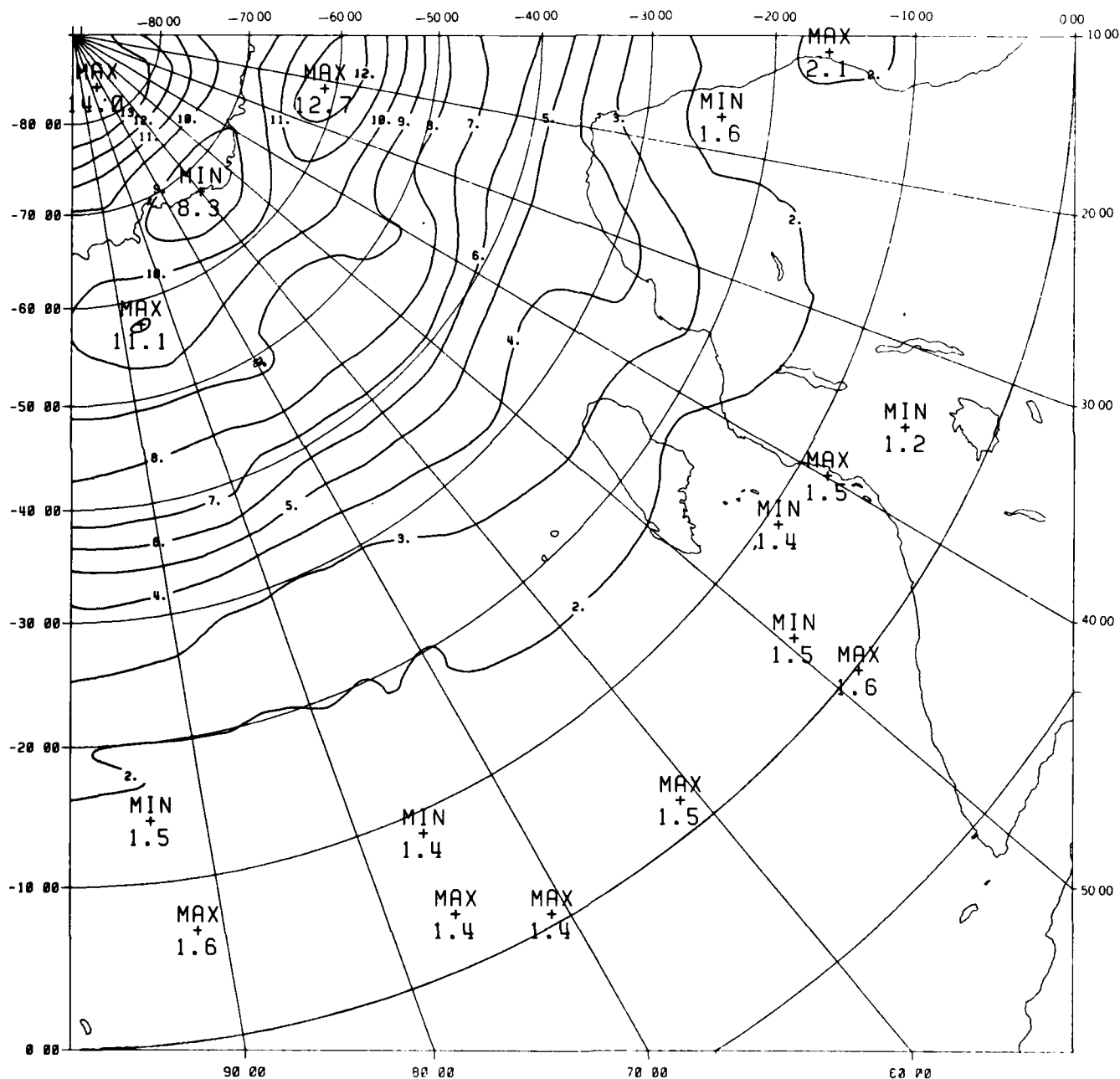
FIGURE B-26



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FIRST QUADRANT

APRIL
MEAN SEA LEVEL
PRESSURE, MILLIBARS

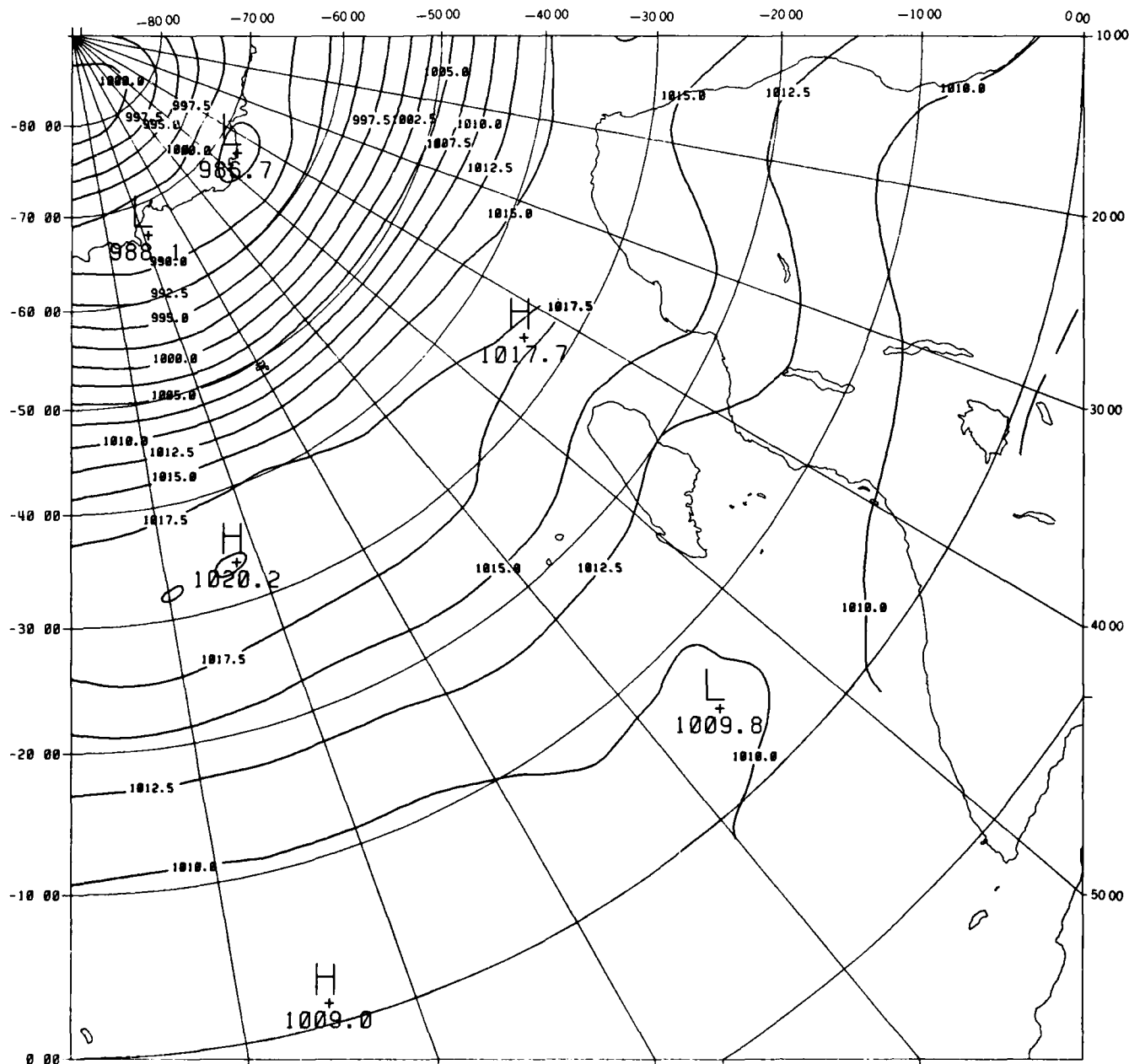
FIGURE B-27



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
SECOND QUADRANT

APRIL
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

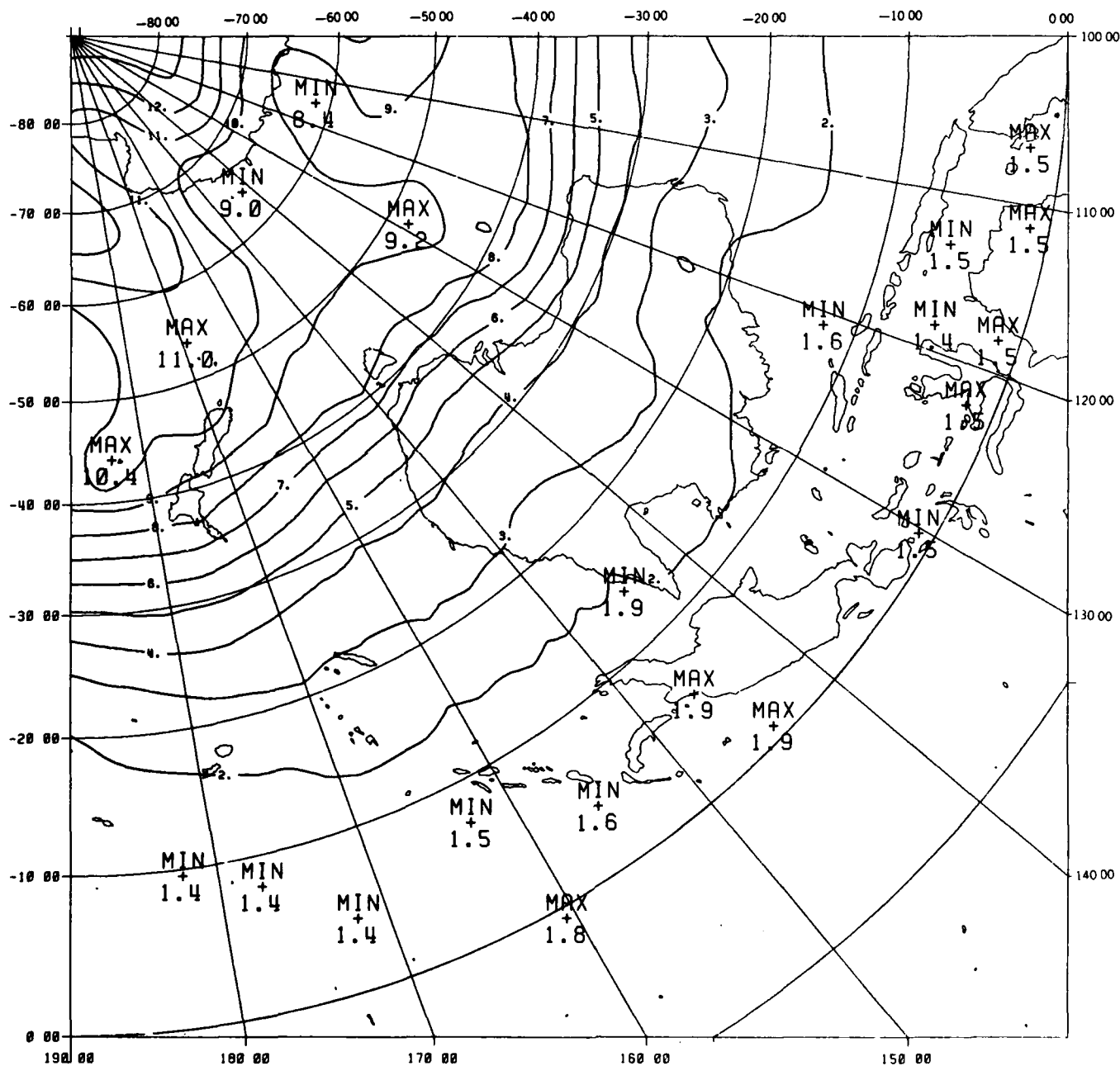
FIGURE B-28



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
SECOND QUADRANT

APRIL
MEAN SEA LEVEL
PRESSURE, MILLIBARS

FIGURE B-29



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
THIRD QUADRANT

APRIL
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

FIGURE B-30

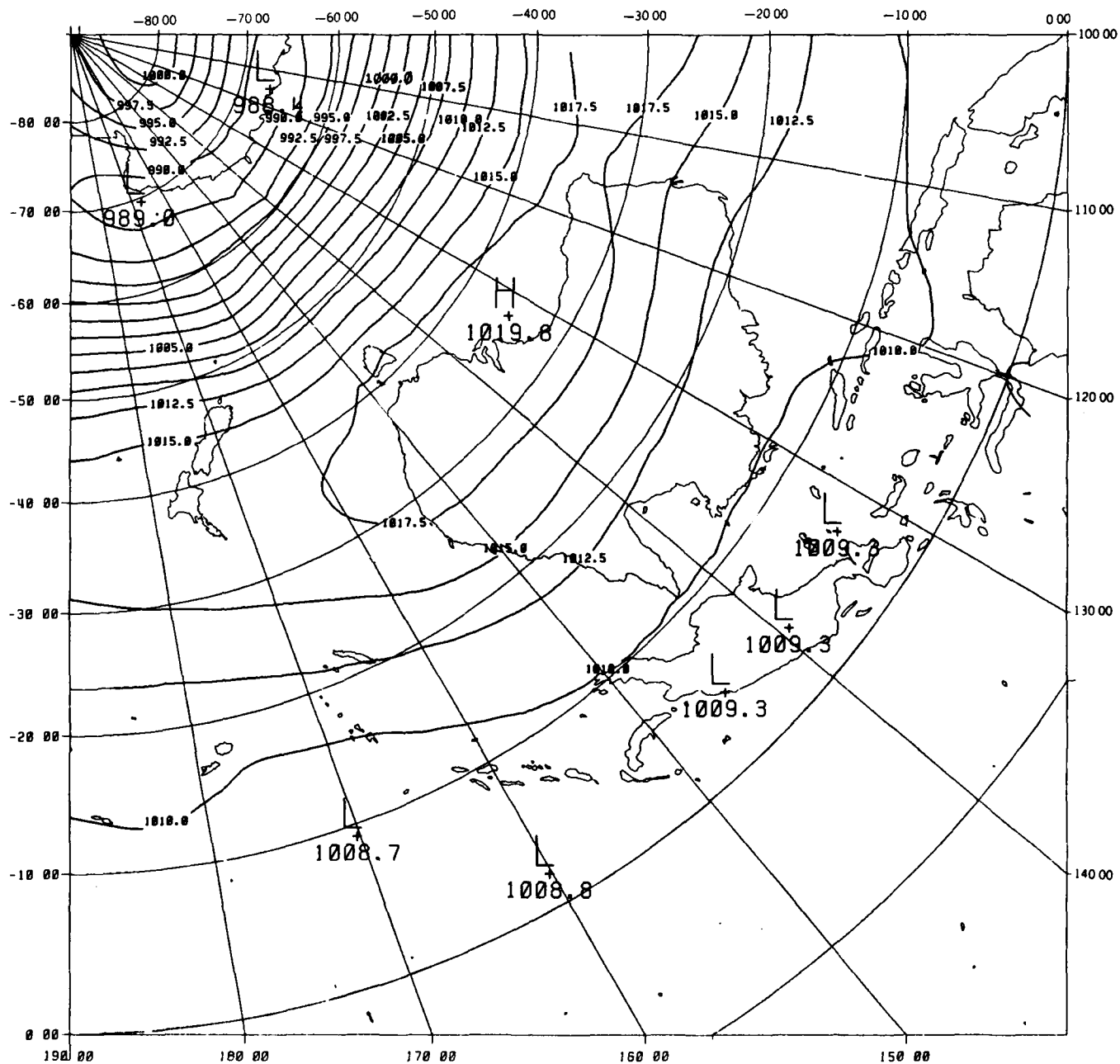
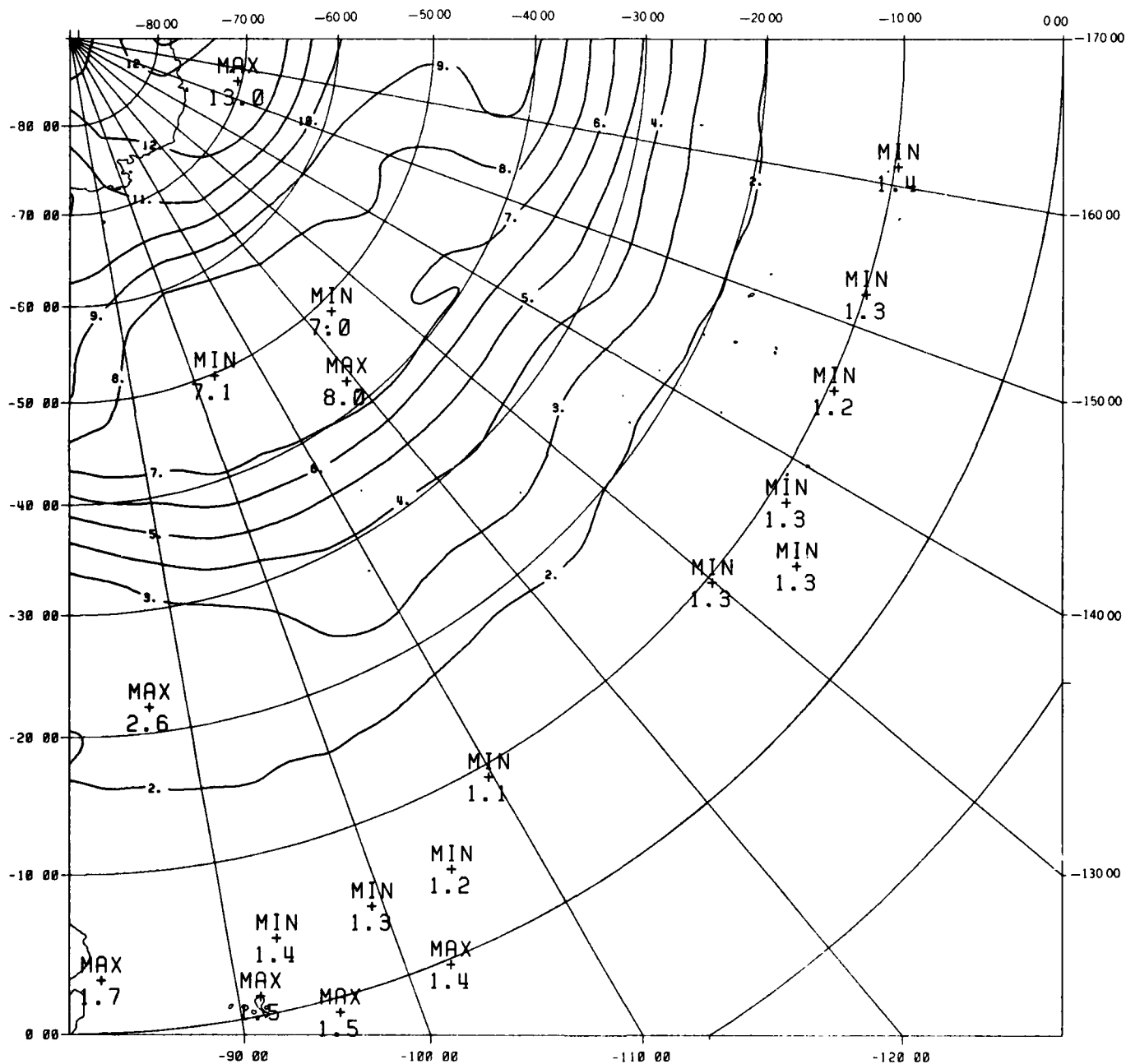


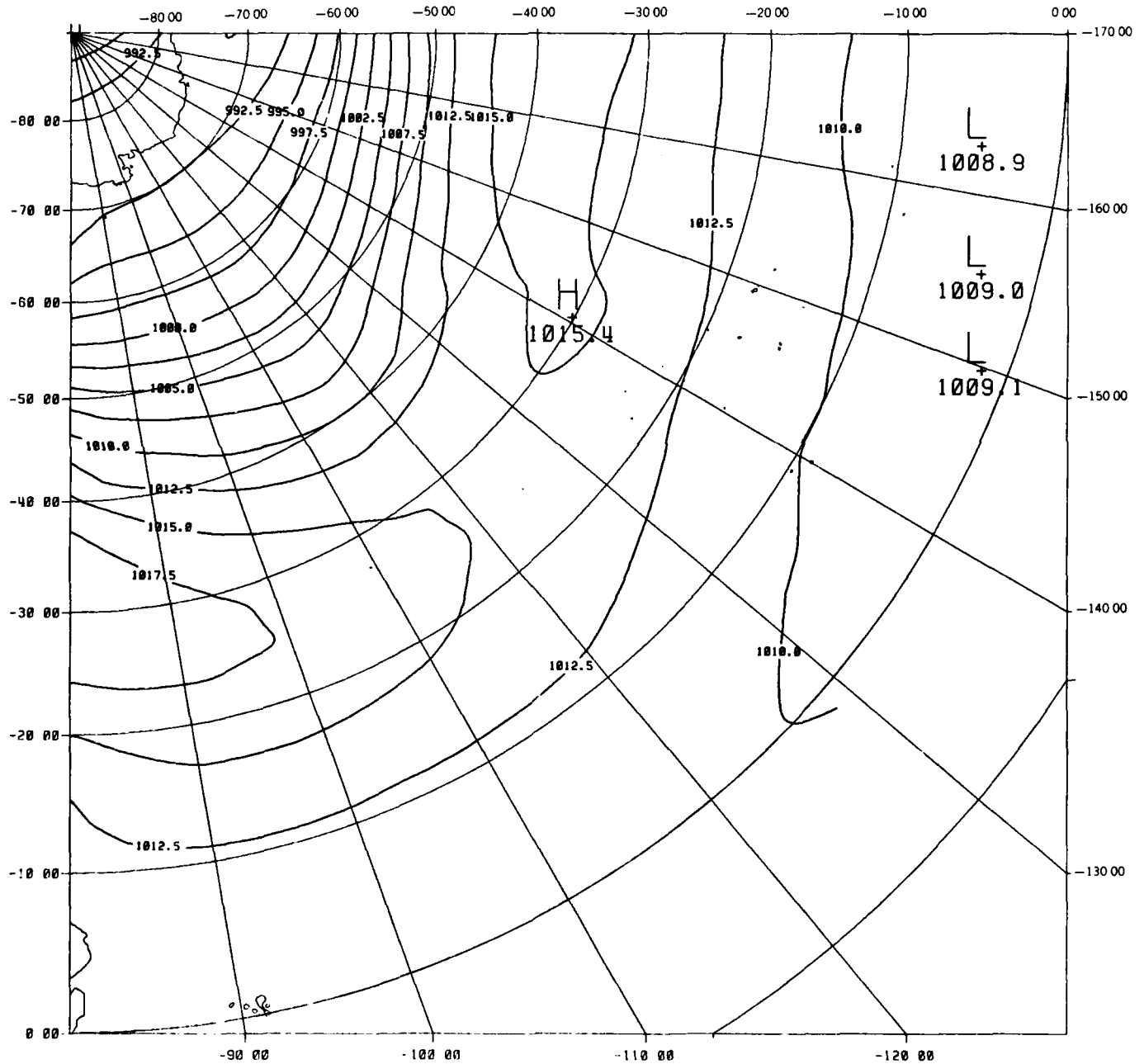
FIGURE B-31



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FOURTH QUADRANT

APRIL
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

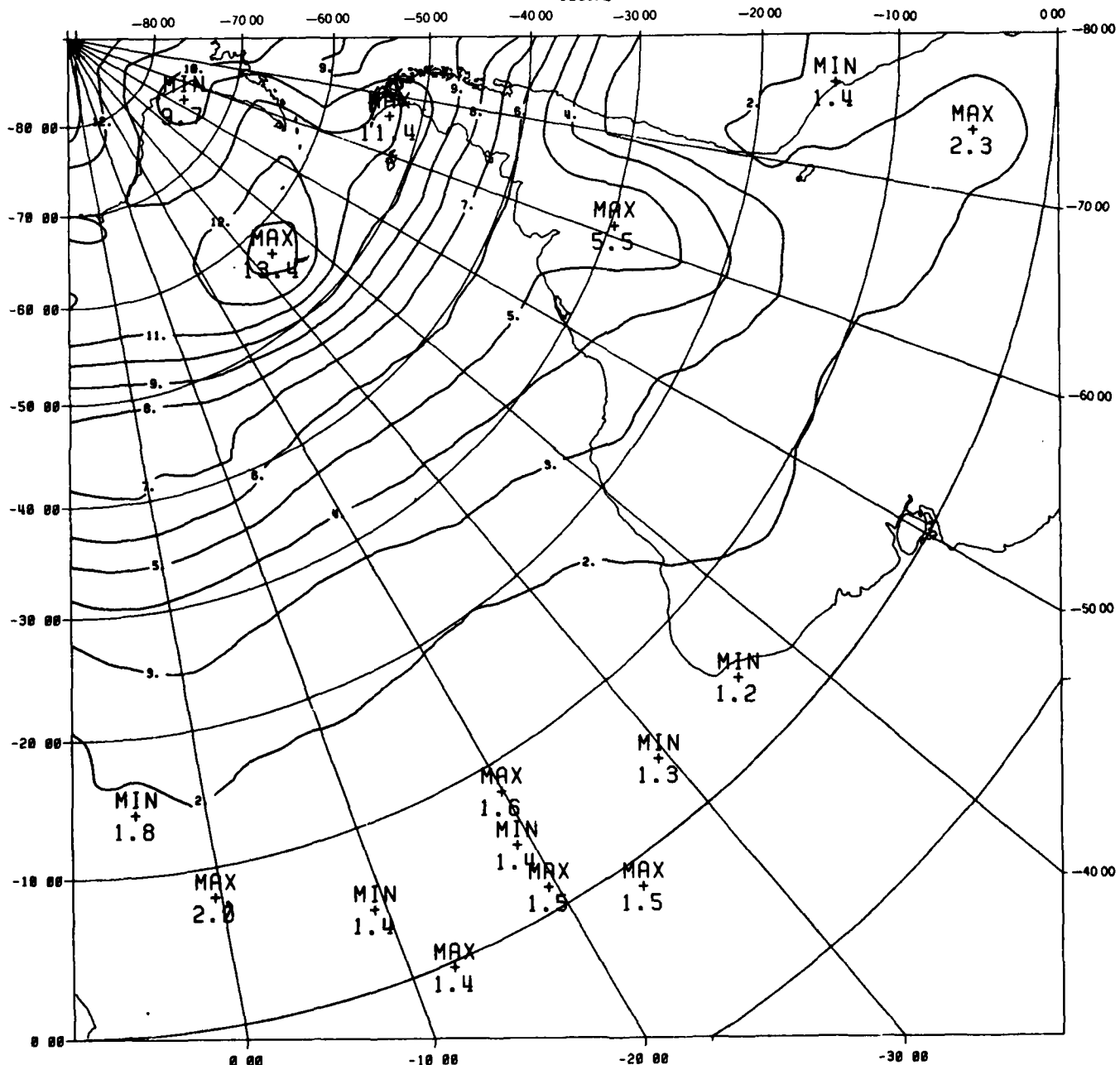
FIGURE B-32



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FOURTH QUADRANT

APRIL
MEAN SEA LEVEL
PRESSURE, MILLIBARS

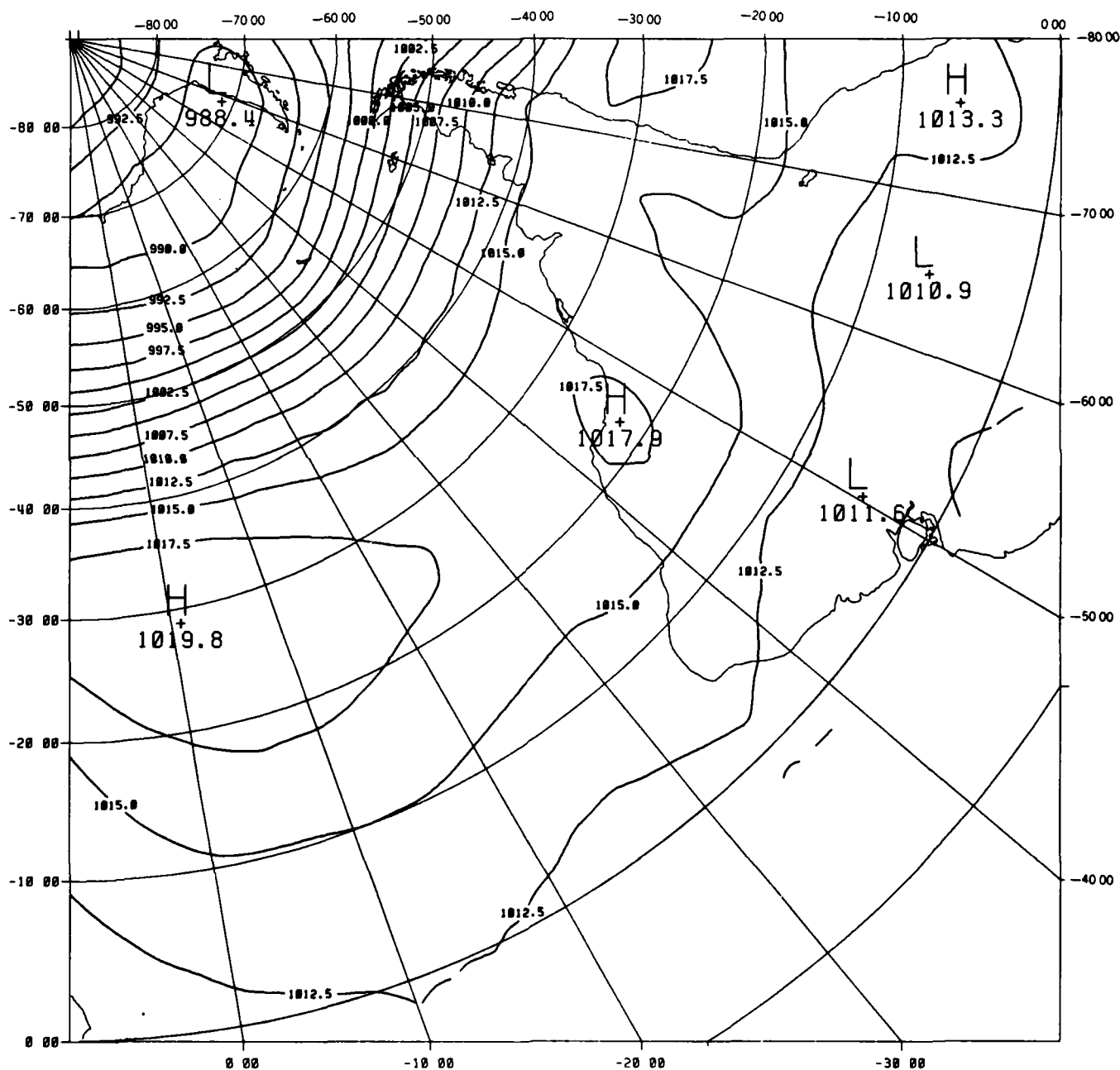
FIGURE B-33



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FIRST QUADRANT

MAY
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

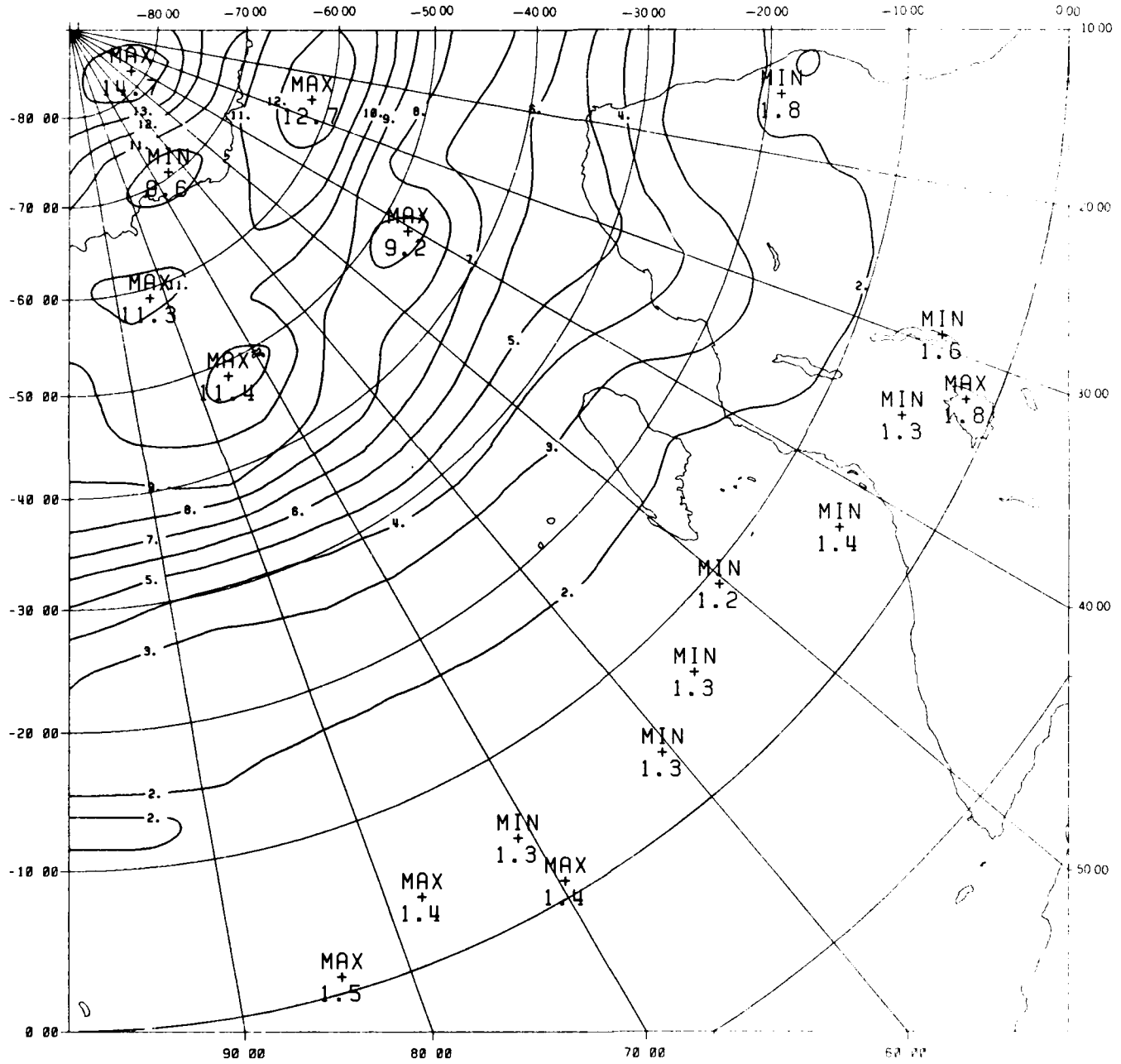
FIGURE B-34



UAIIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FIRST QUADRANT

MAY
MEAN SEA LEVEL
PRESSURE, MILLIBARS

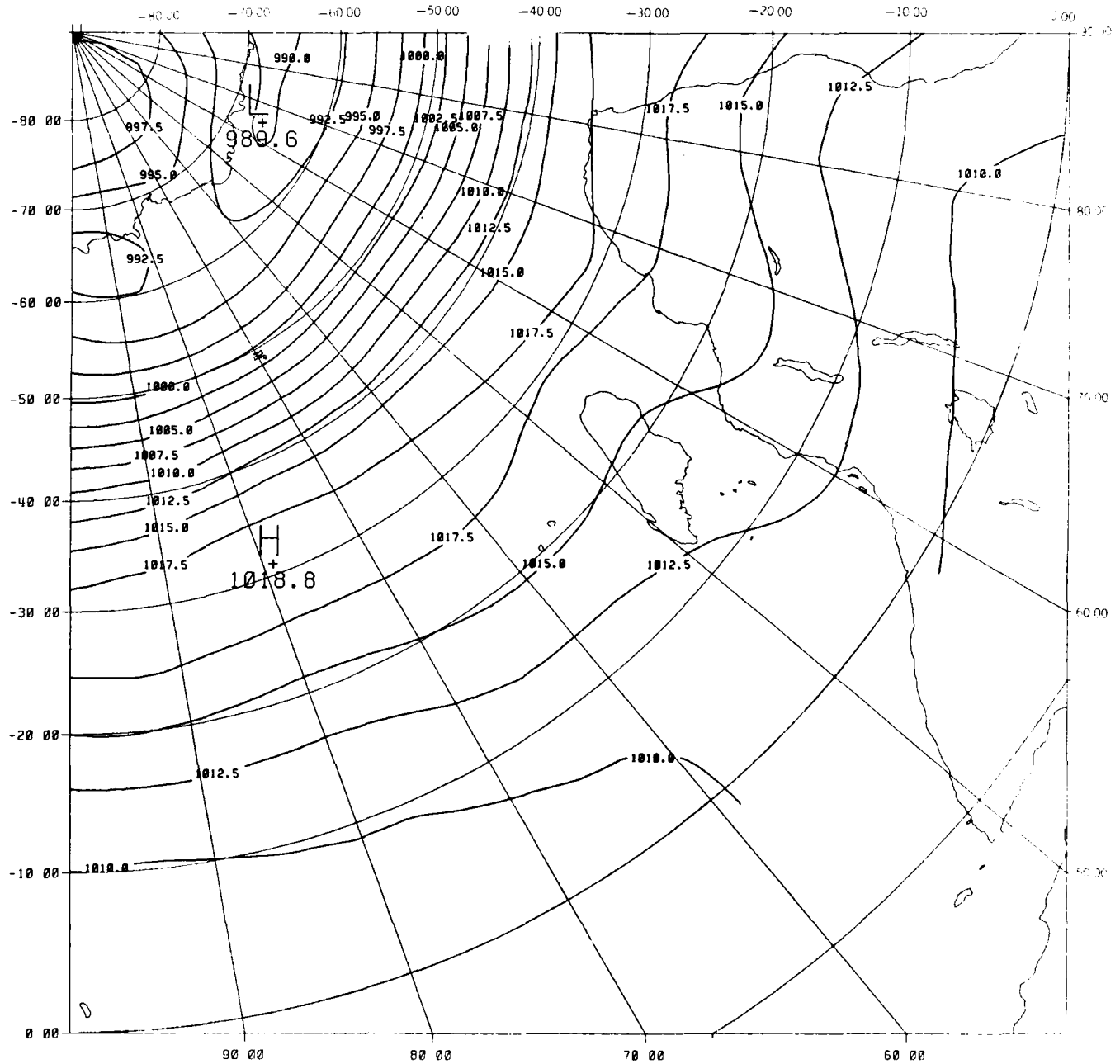
FIGURE B-35



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
SECOND QUADRANT

MAY
MEAN SEA LEVEL
STDEV OF PRESSURE, MIN 1.0

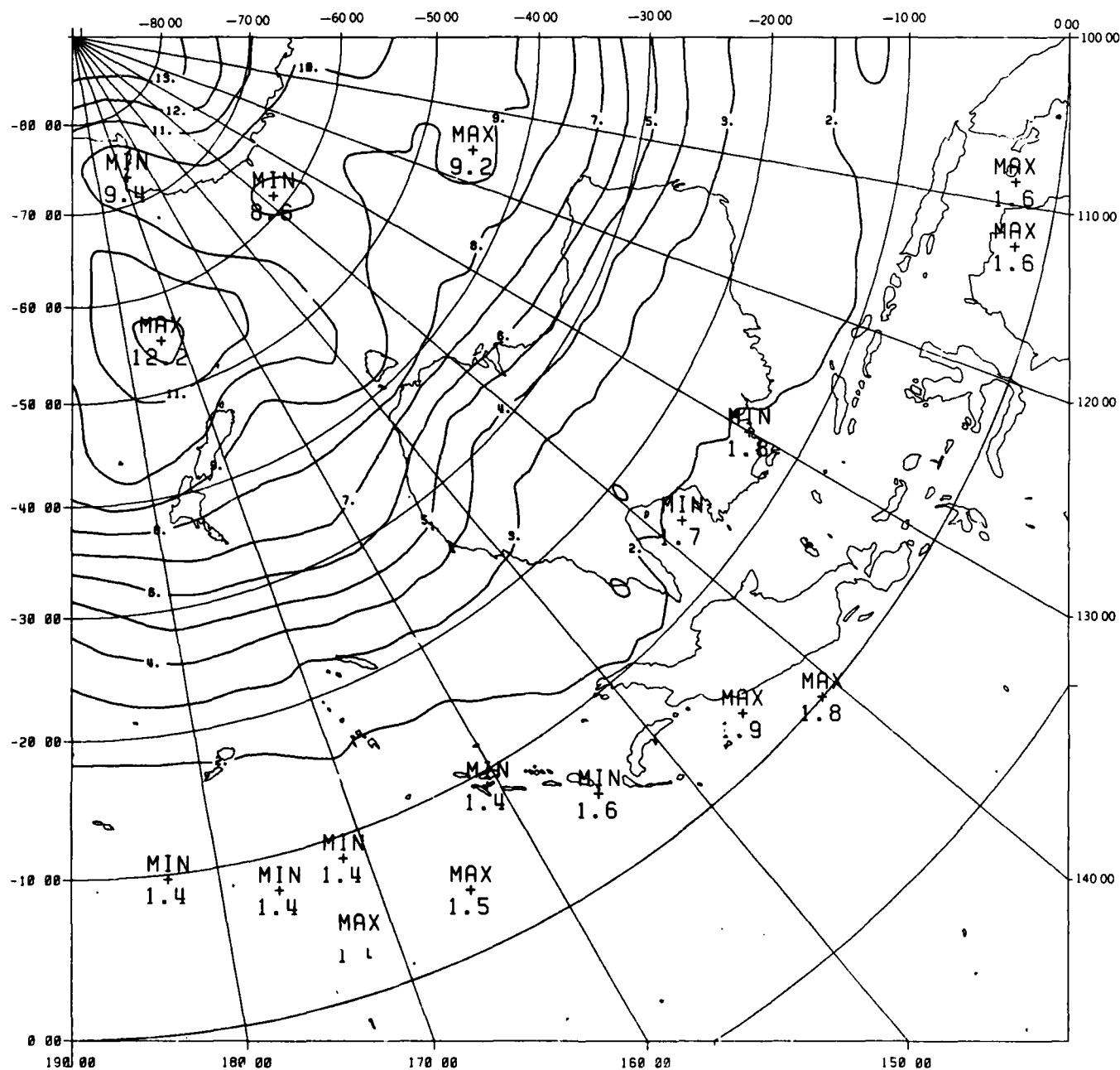
FIGURE B-36



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
SECOND QUADRANT

MAY
MEAN SEA LEVEL
PRESSURE, MILLIBARS

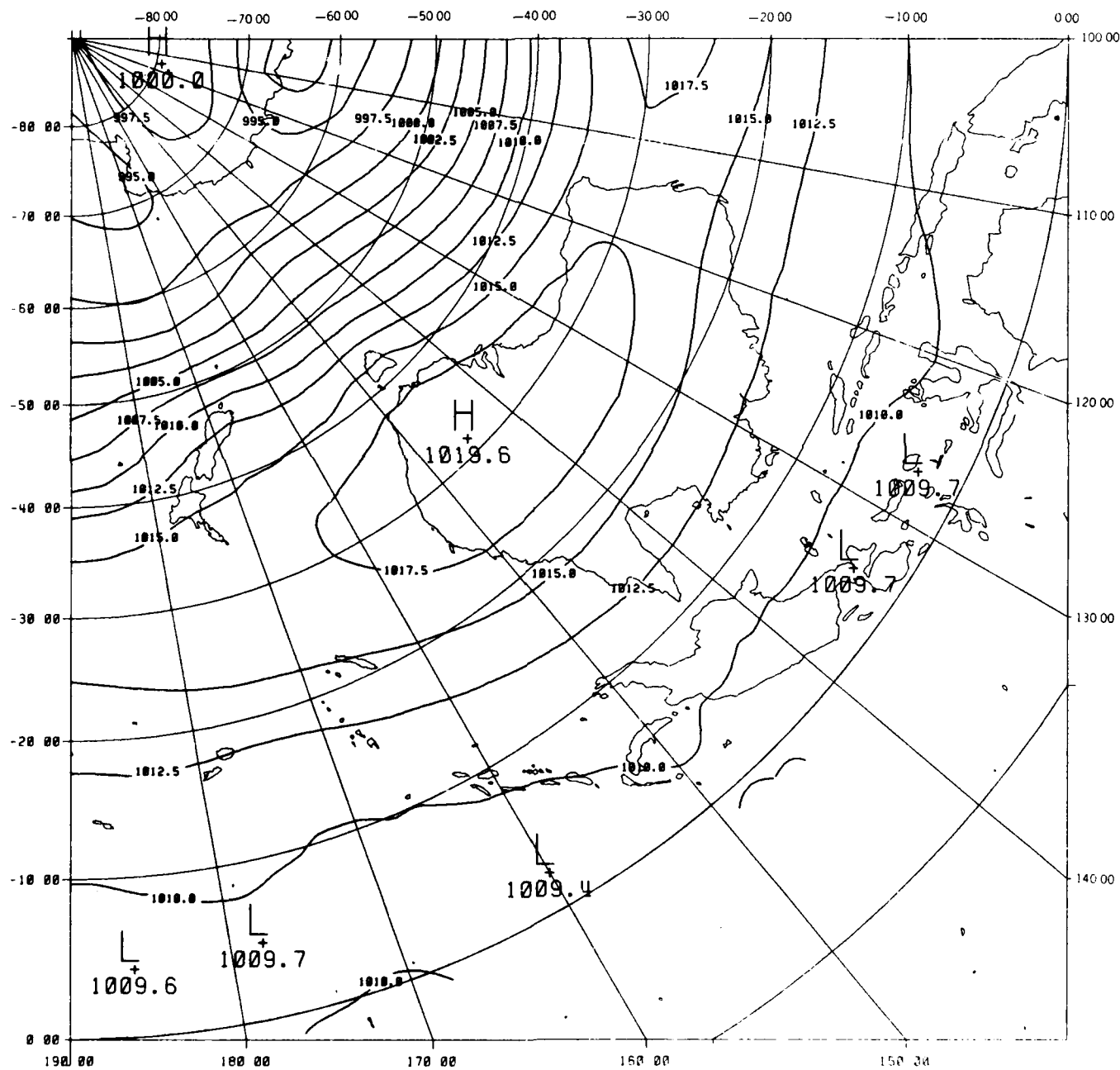
FIGURE B-37



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
THIRD QUADRANT

MAY
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

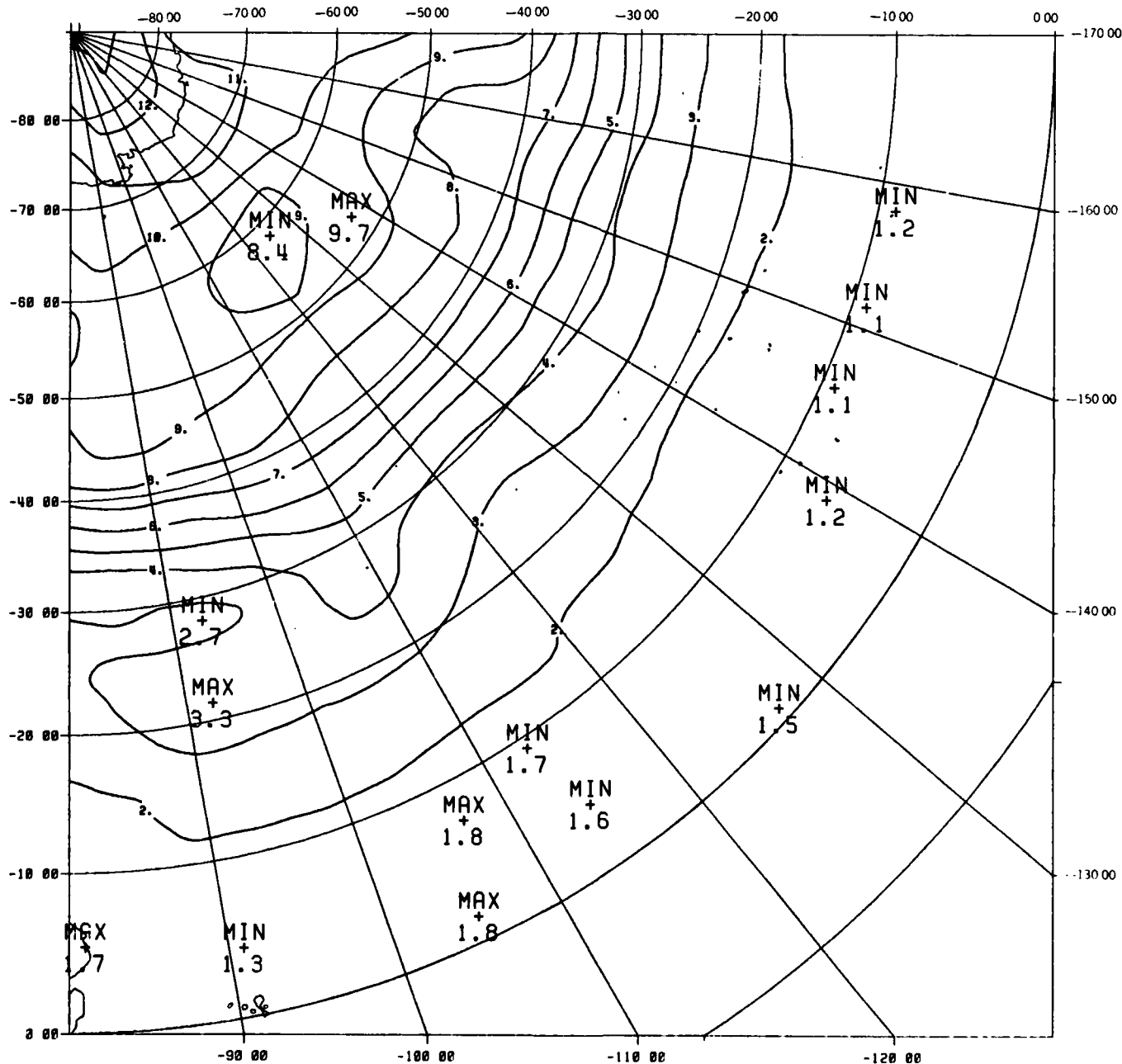
FIGURE B-38



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
THIRD QUADRANT

MAY
MEAN SEA LEVEL
PRESSURE, MILLIBARS

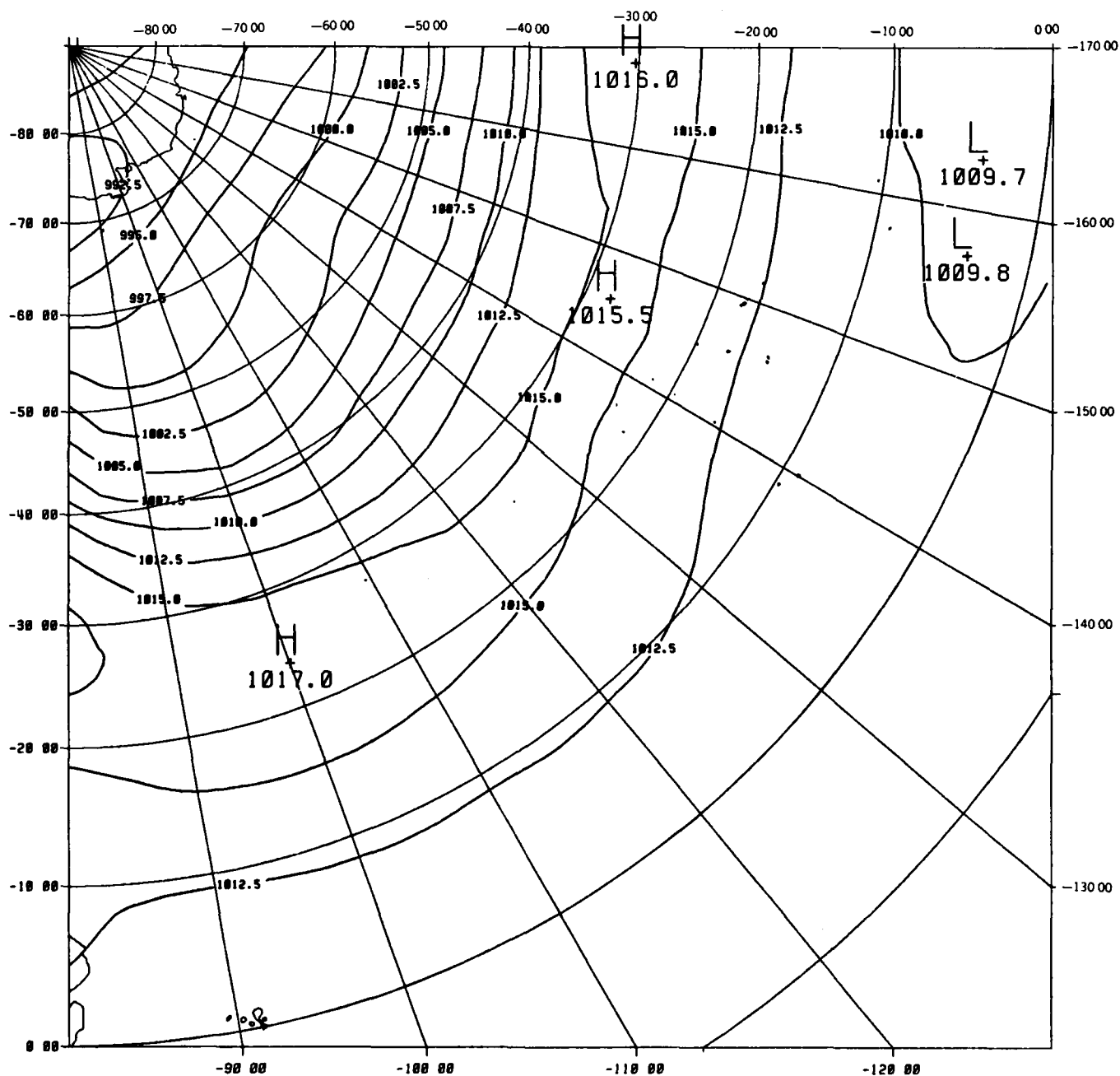
FIGURE B-39



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FOURTH QUADRANT

MAY
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

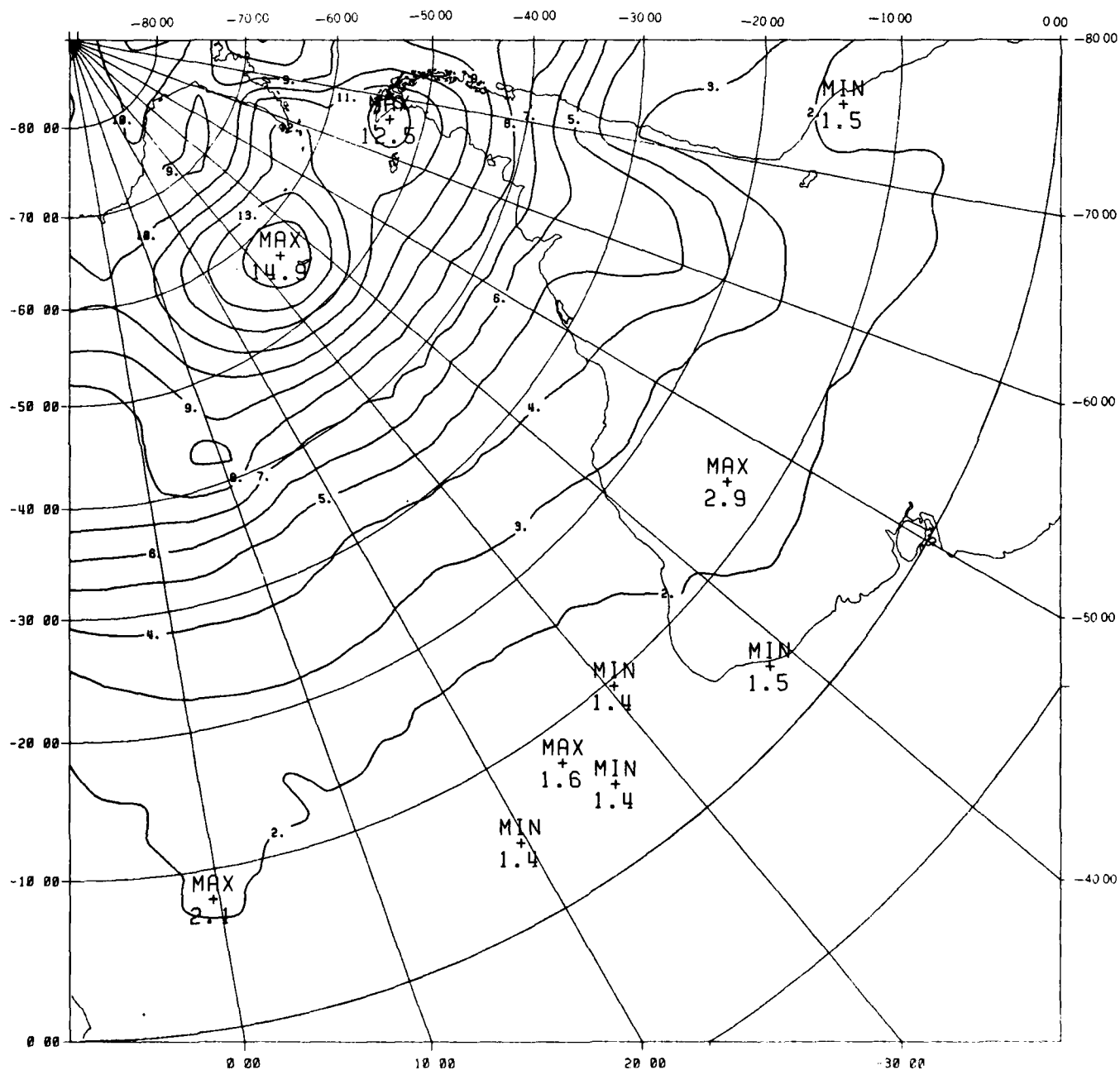
FIGURE B-40



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FOURTH QUADRANT

MAY
MEAN SEA LEVEL
PRESSURE, MILLIBARS

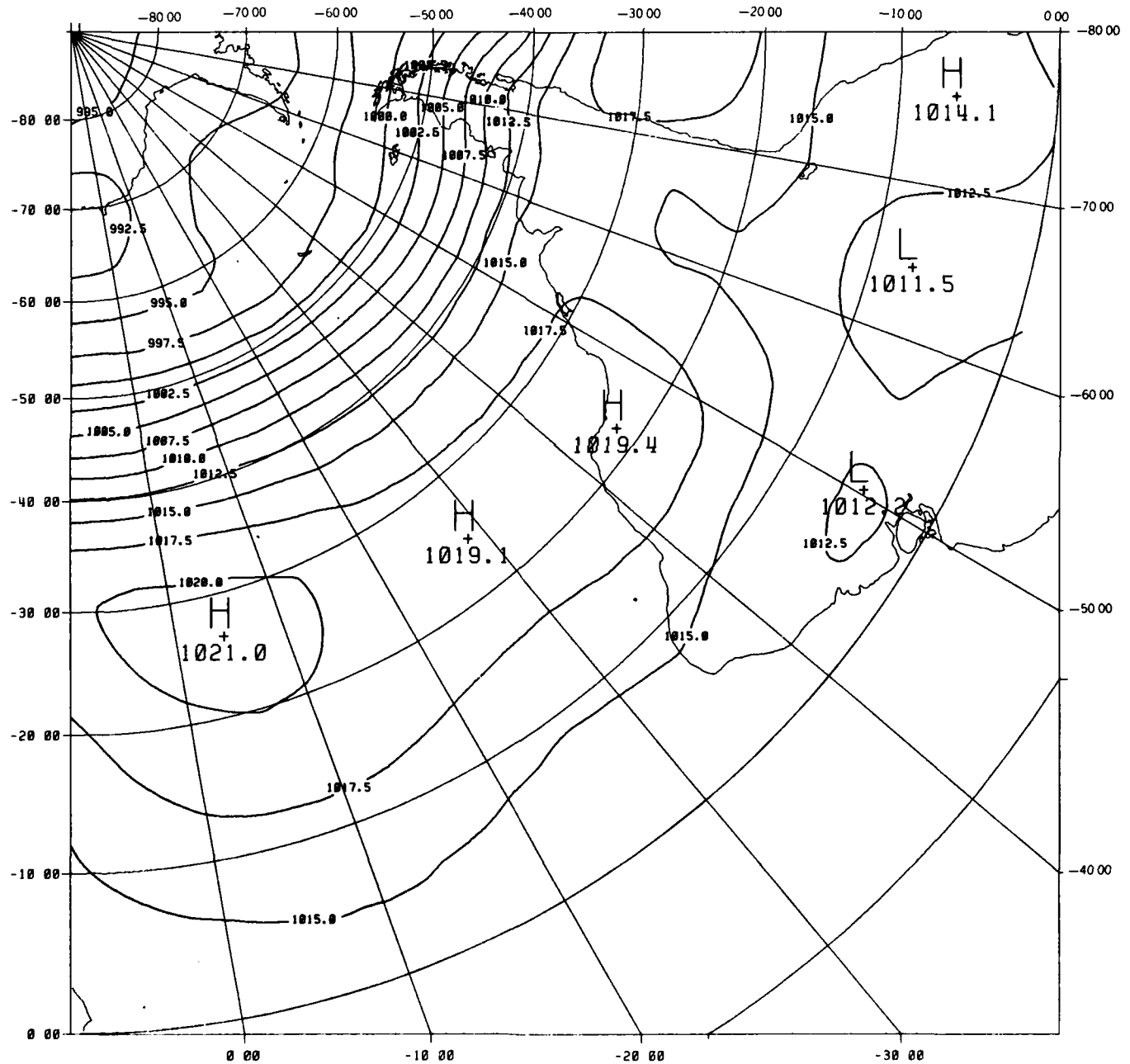
FIGURE B-41



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FIRST QUADRANT

JUNE
MEAN SEA LEVEL
SIDE OF PRESSURE, MILLIBARS

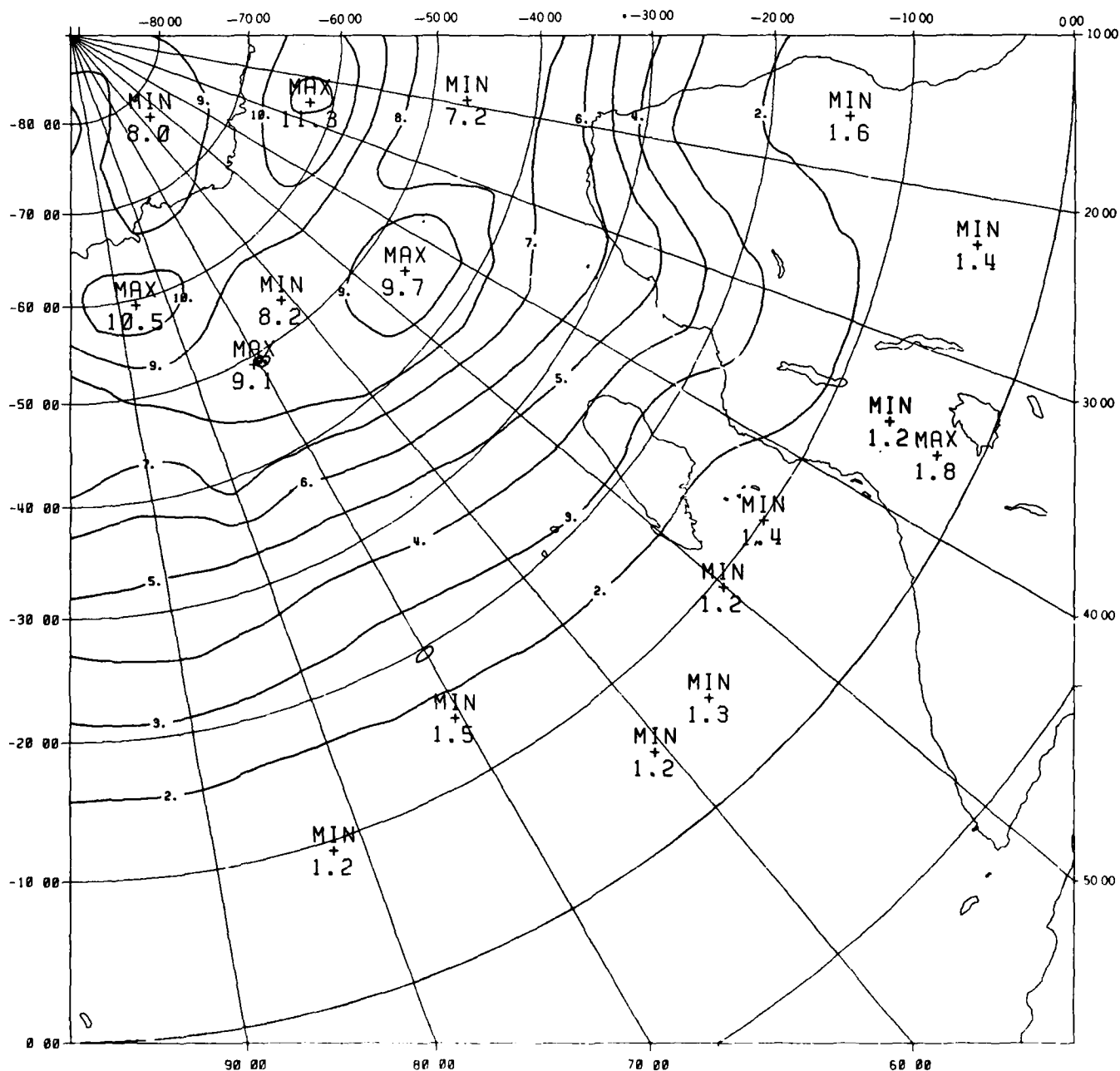
FIGURE B-42



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FIRST QUADRANT

JUNE
MEAN SEA LEVEL
PRESSURE, MILLIBARS

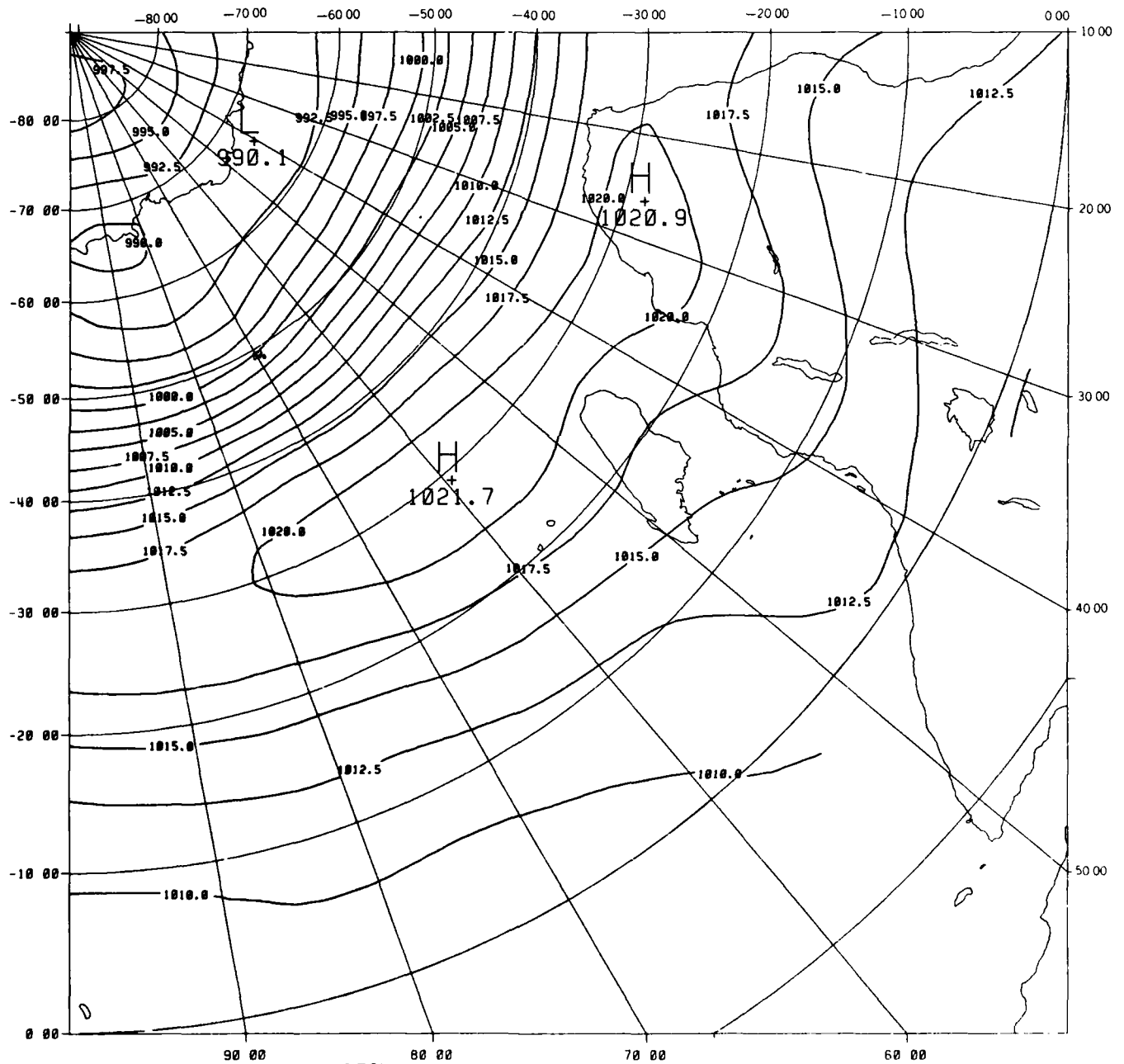
FIGURE B-43



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
SECOND QUADRANT

JUNE
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

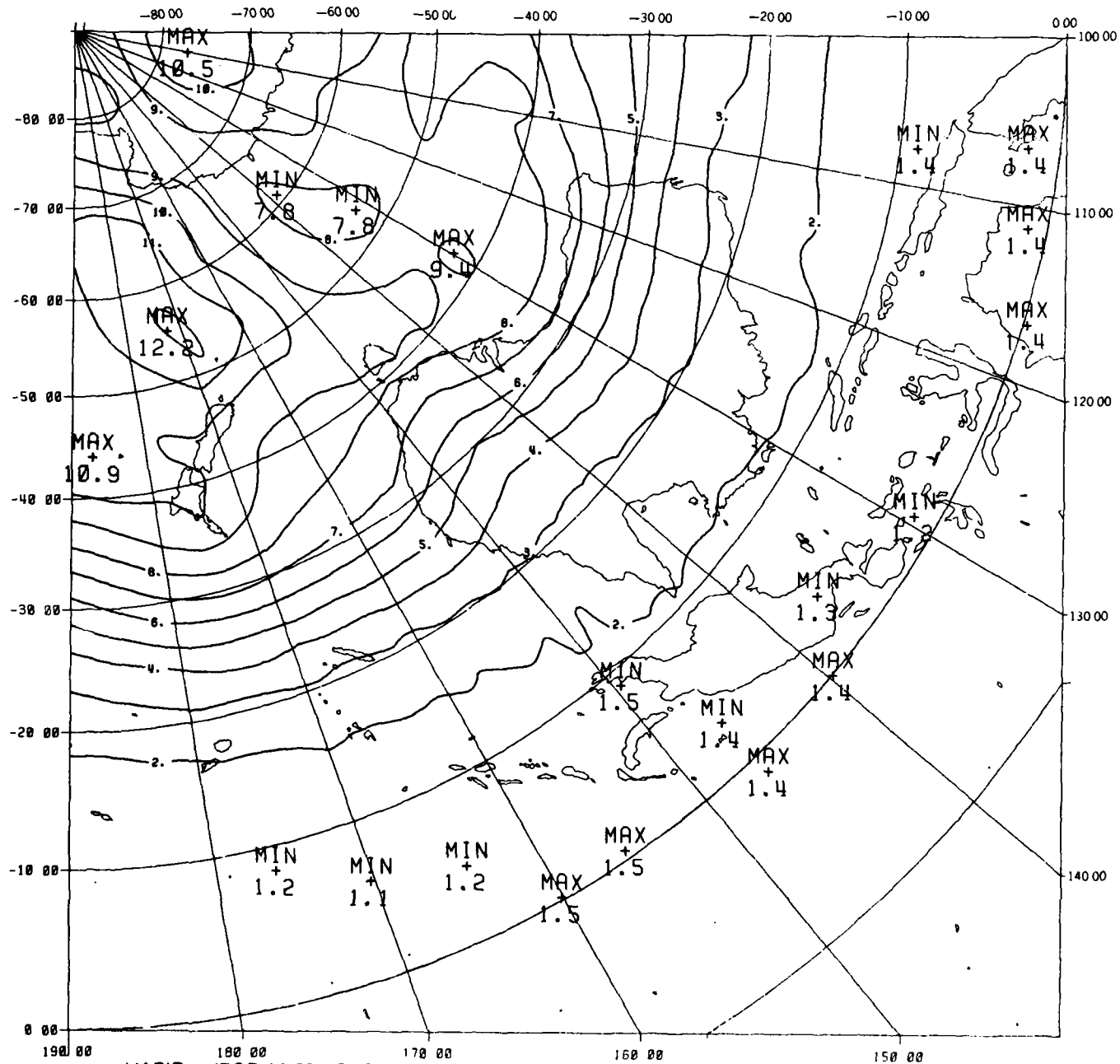
FIGURE B-44



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
SECOND QUADRANT

JUNE
MEAN SEA LEVEL
PRESSURE, MILLIBARS

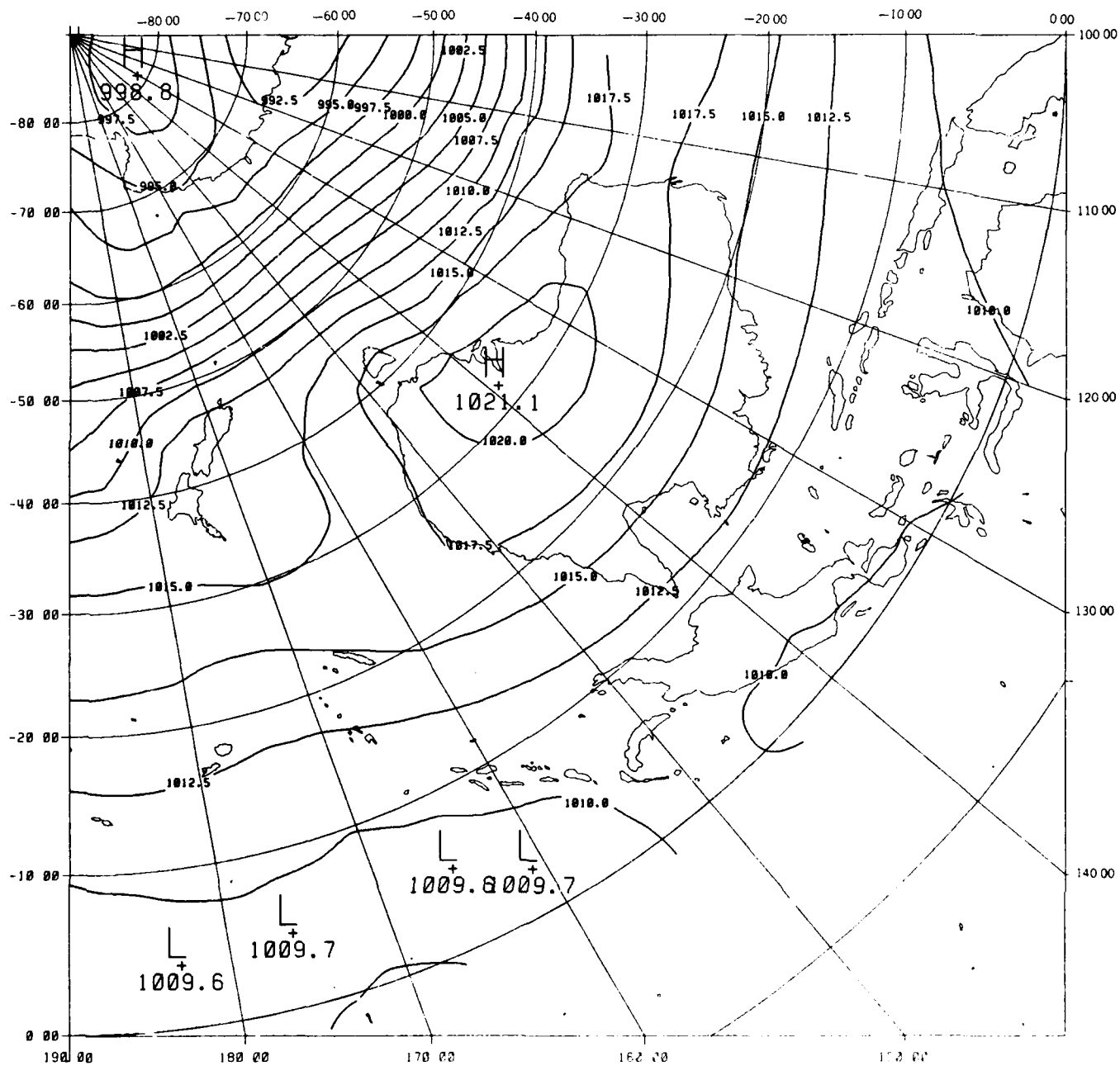
FIGURE B-45



UAIIP (POR 1973-1978)
SOUTHERN HEMISPHERE
THIRD QUADRANT

JUNE
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

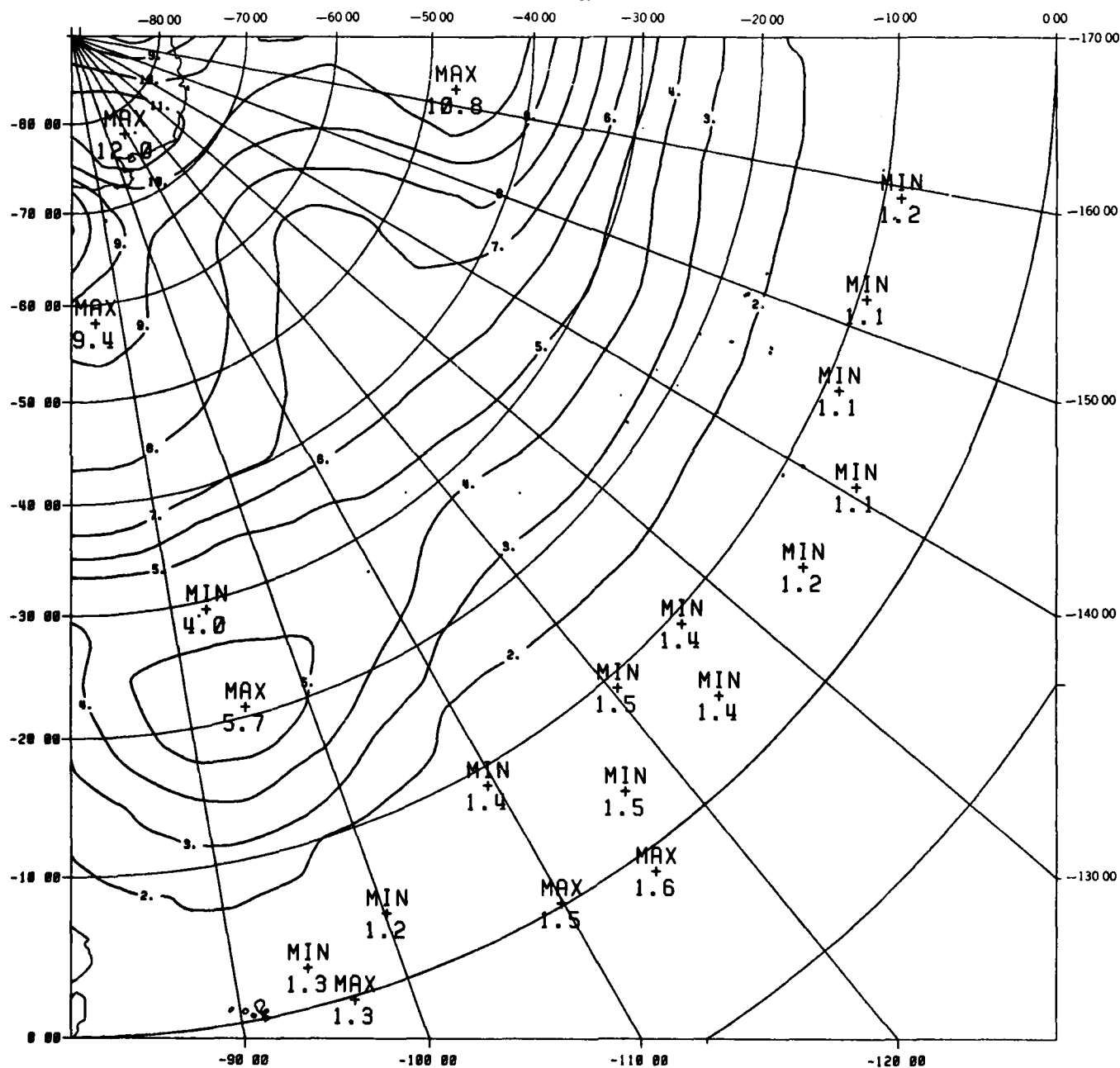
FIGURE B-46



UAIIP (POR 1973-1978)
SOUTHERN HEMISPHERE
THIRD QUADRANT

JUNE
MEAN SEA LEVEL
PRESSURE, MILIBARS

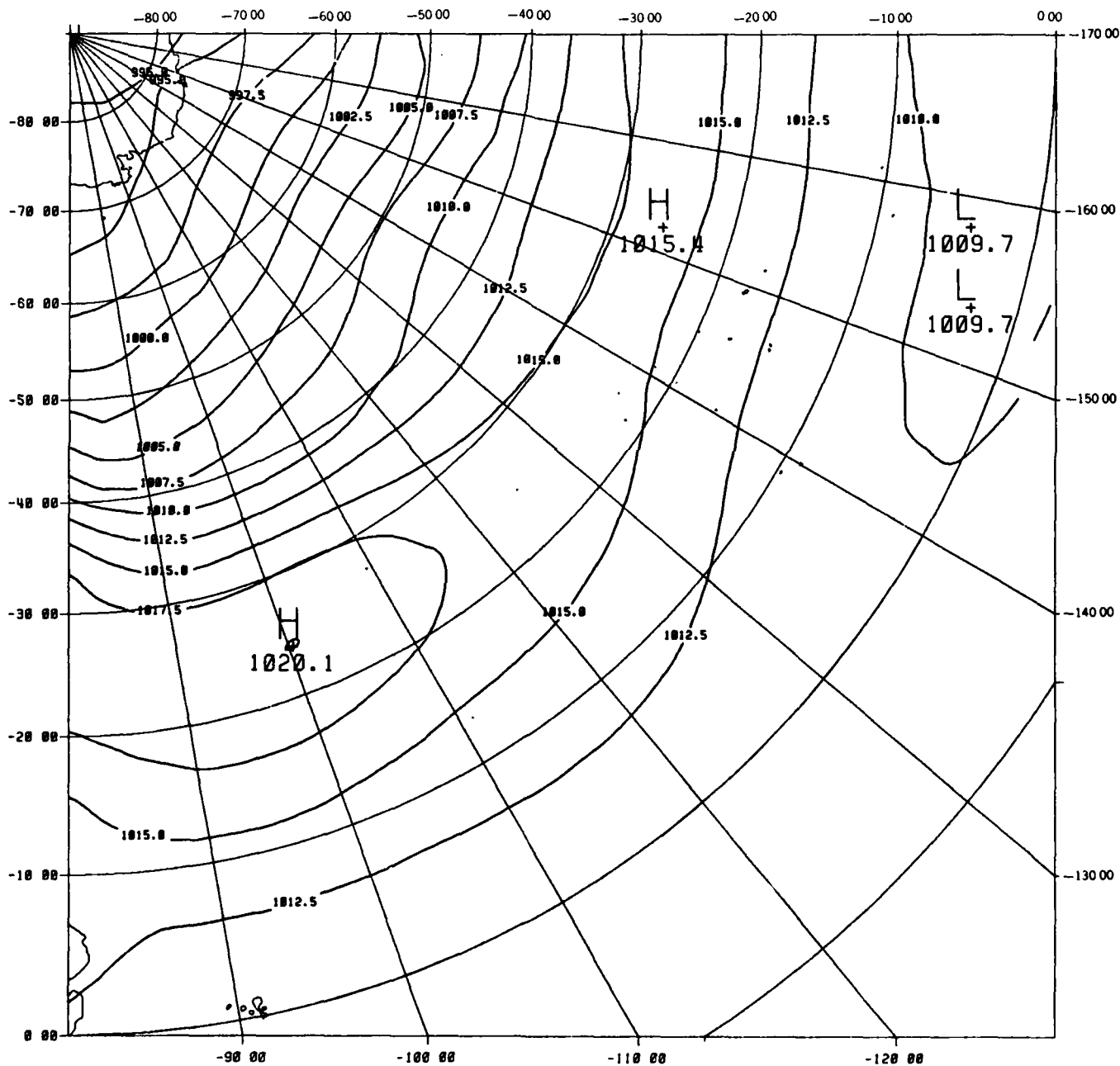
FIGURE B-47



JAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FOURTH QUADRANT

JUNE
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

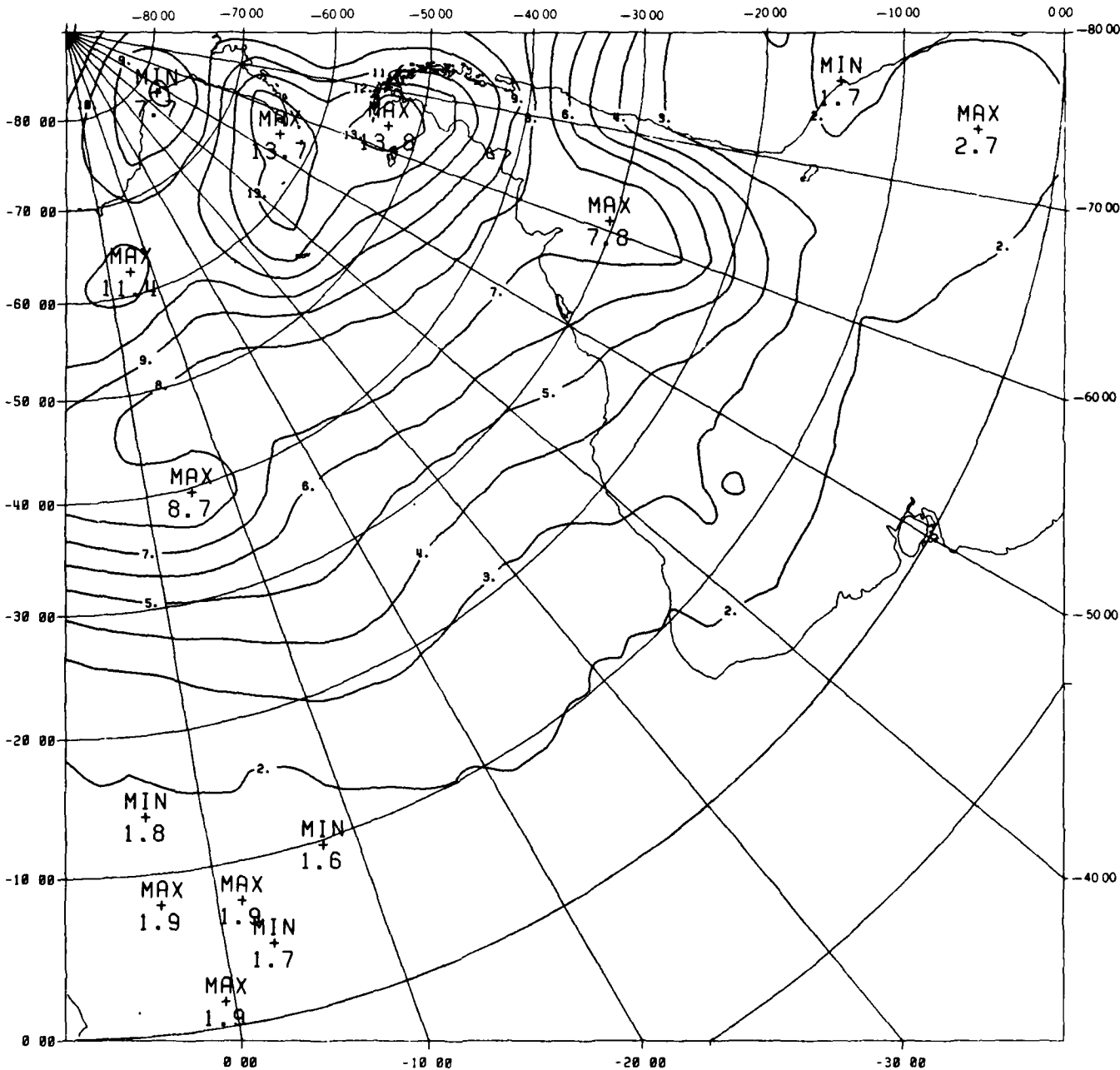
FIGURE B-48



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FOURTH QUADRANT

JUNE
MEAN SEA LEVEL
PRESSURE, MILLIBARS

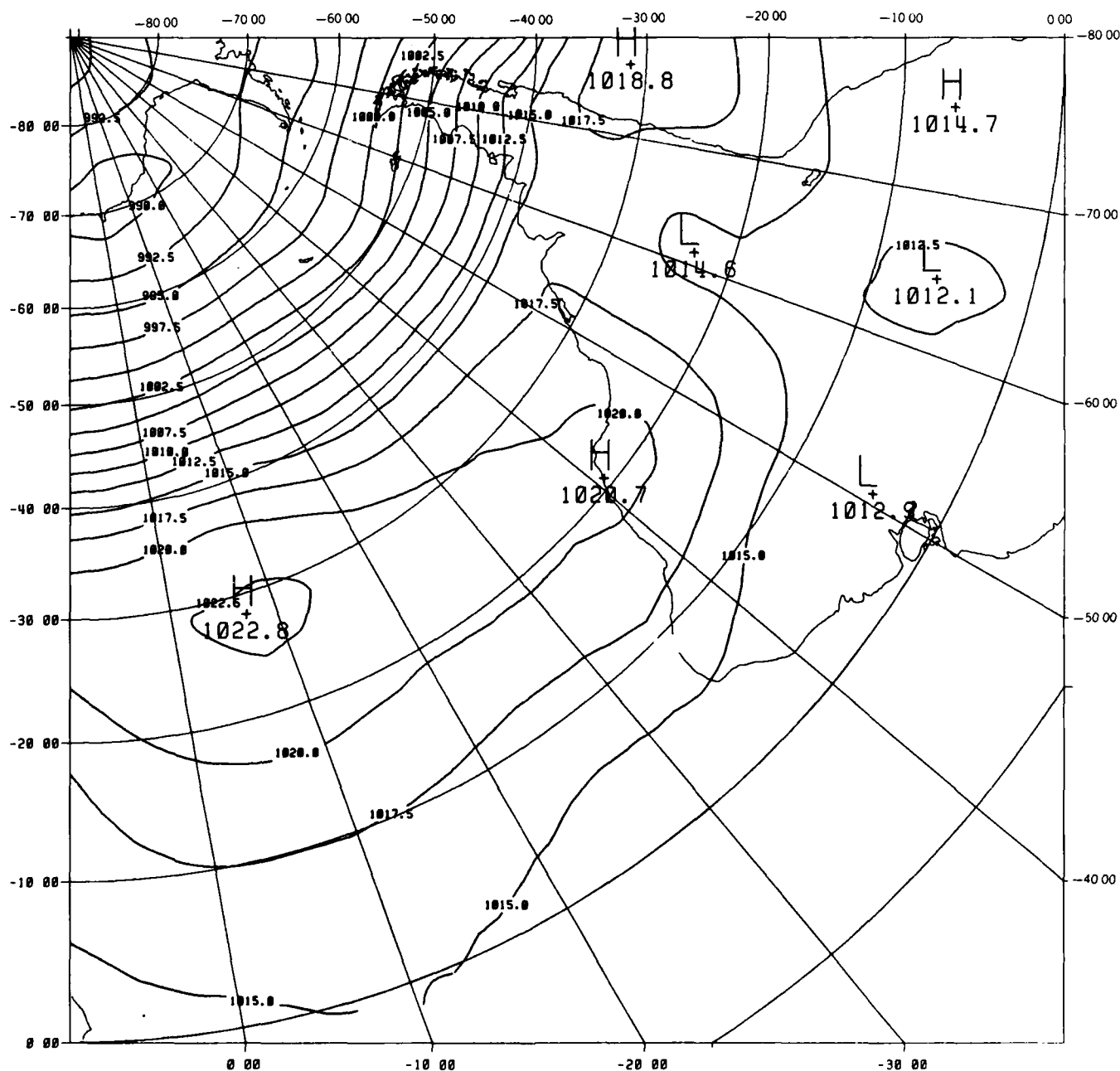
FIGURE B-49



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FIRST QUADRANT

JULY
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

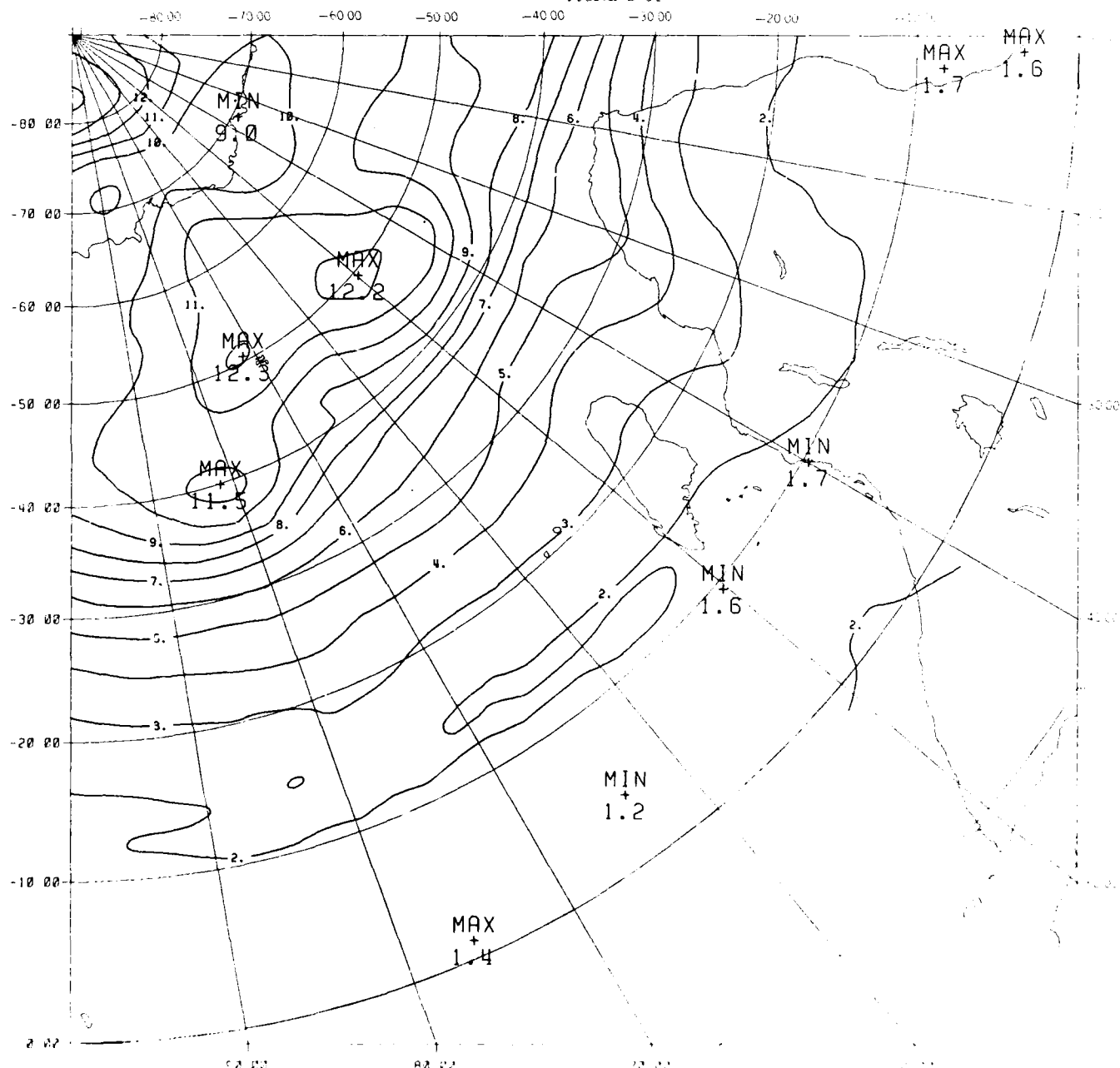
FIGURE B-50



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FIRST QUADRANT

JULY
MEAN SEA LEVEL
PRESSURE, MILLIBARS

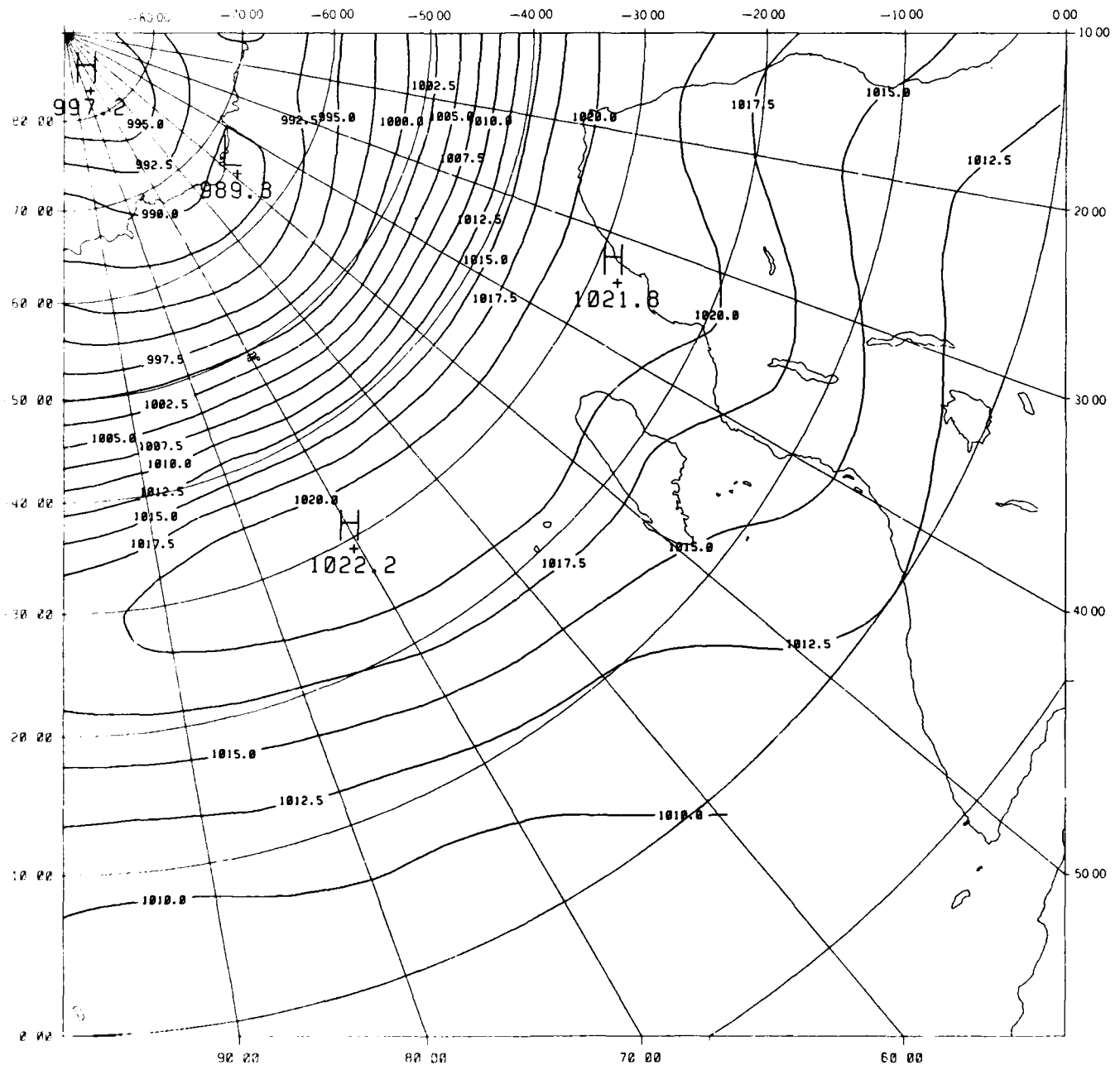
FIGURE B-51



UAPIP (POR 1973-1978)
SOUTHERN, to M. L. H. RE
SECOND QUARTER

[illegible]

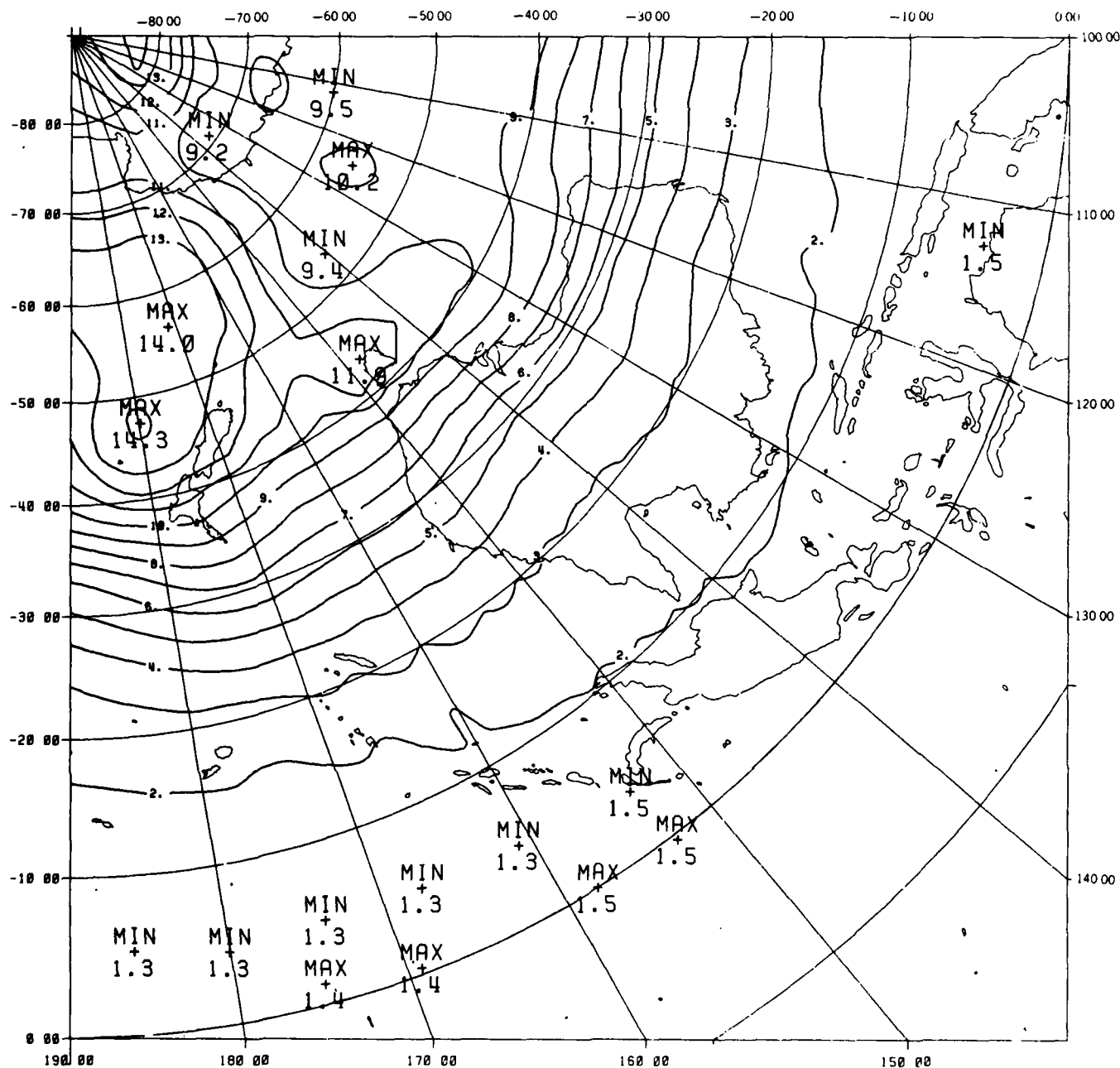
FIGURE B-52



UAIIP (POR 1973-1978)
SOUTHERN HEMISPHERE
SECOND QUADRANT

JULY
MEAN SEA LEVEL
PRESSURE, MILLIBARS

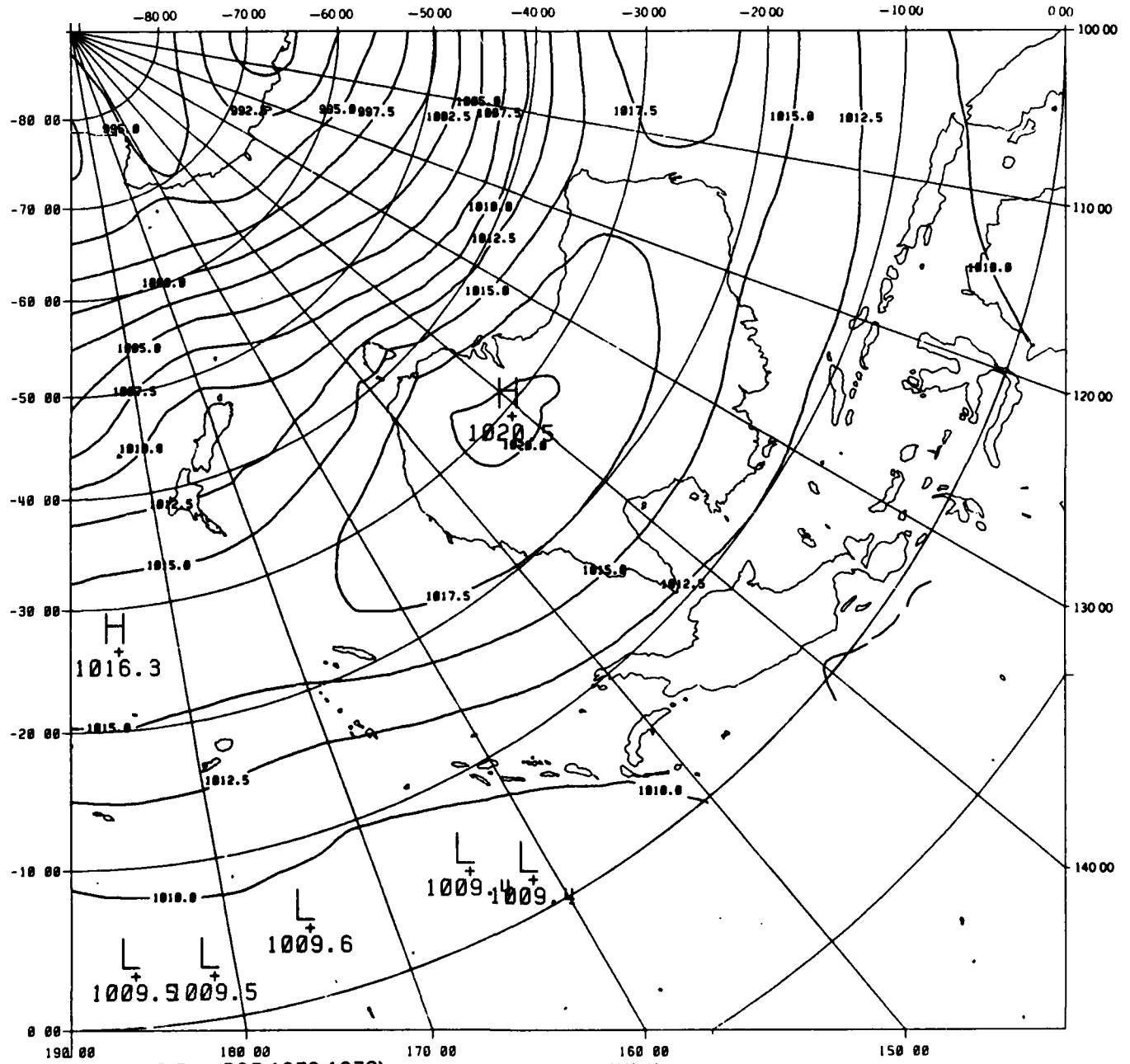
FIGURE B-53



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
THIRD QUADRANT

JULY
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

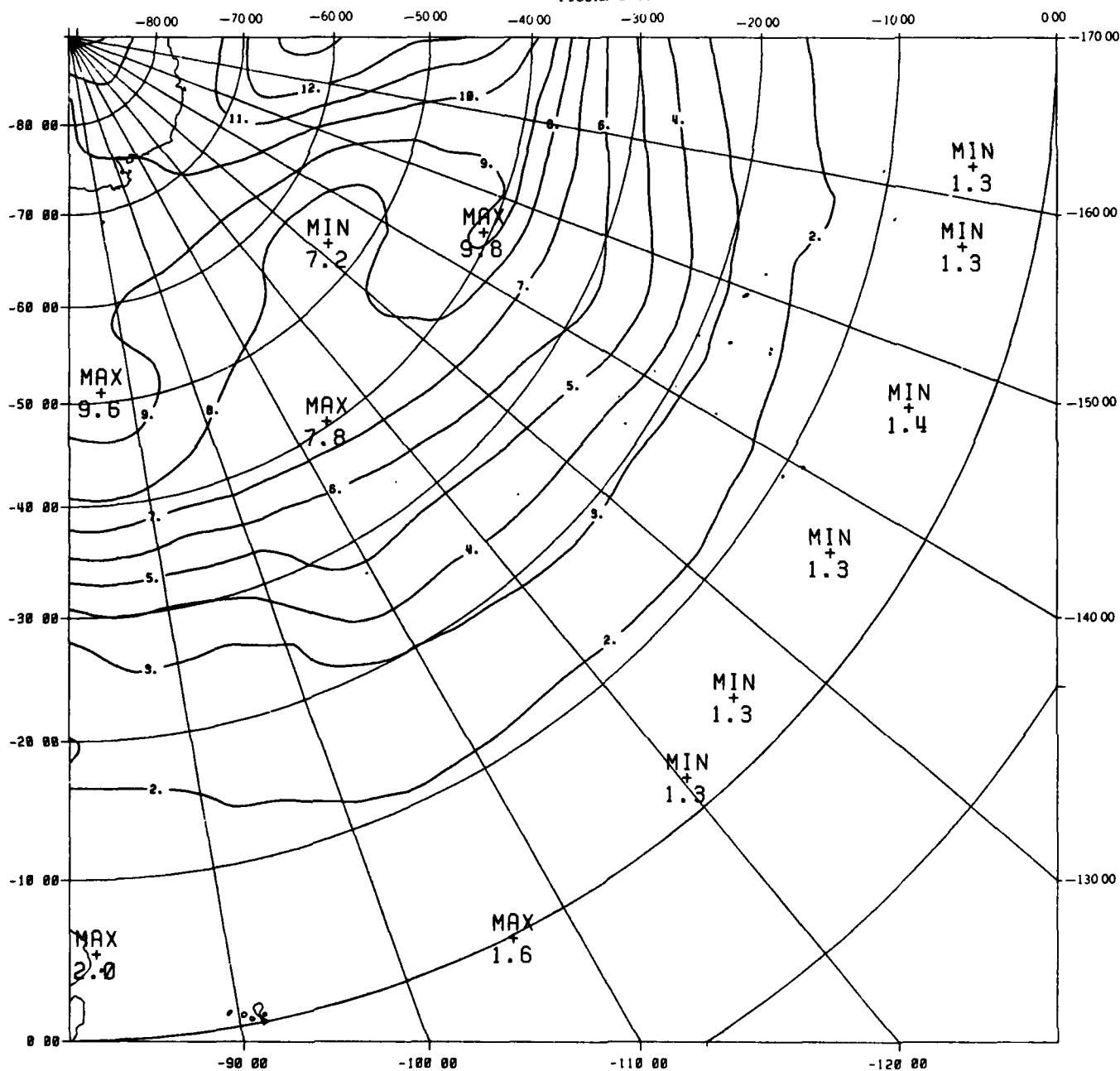
FIGURE B-54



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
THIRD QUADRANT

JULY
MEAN SEA LEVEL
PRESSURE, MILLIBARS

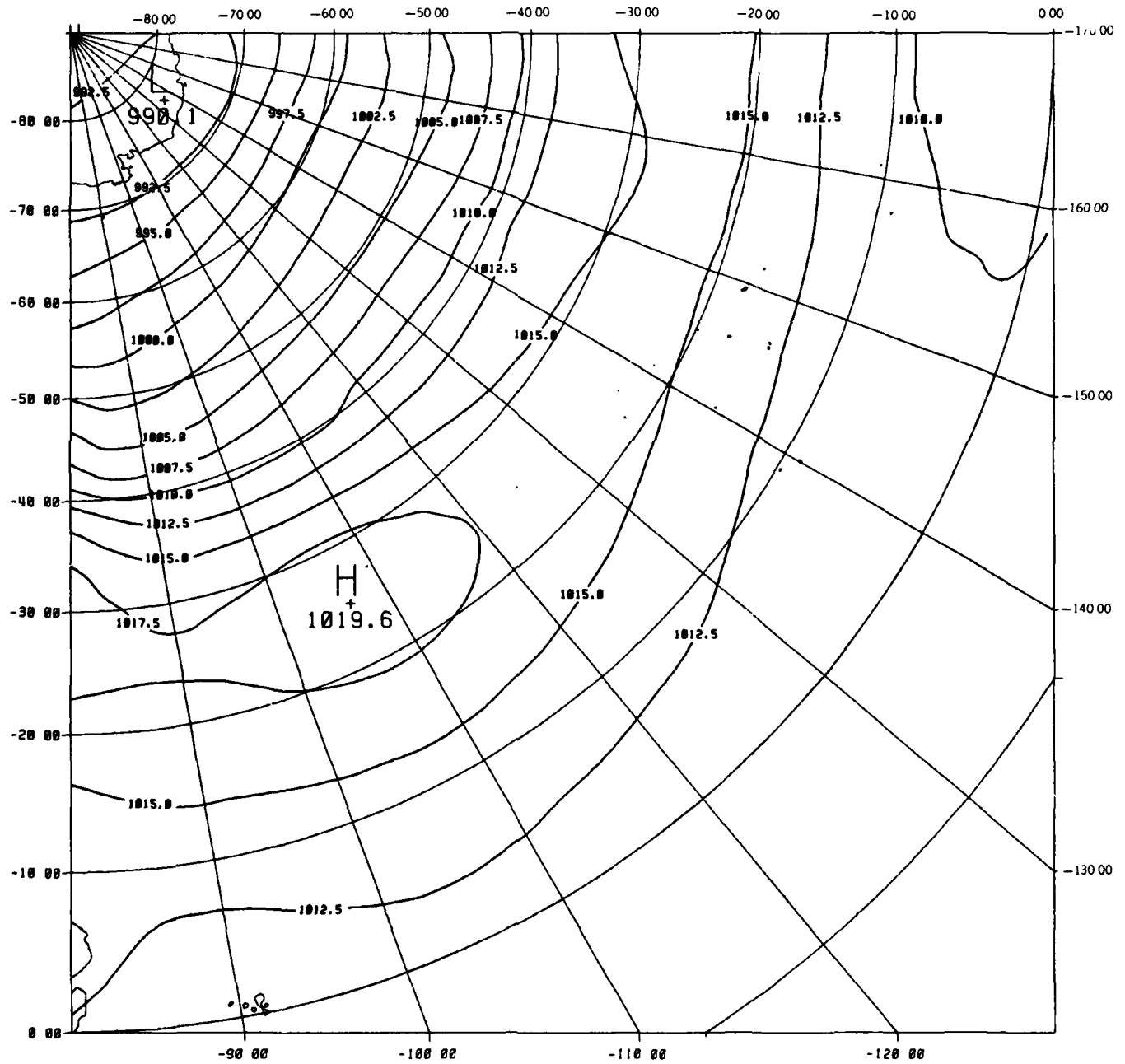
FIGURE B-55



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FOURTH QUADRANT

JULY
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

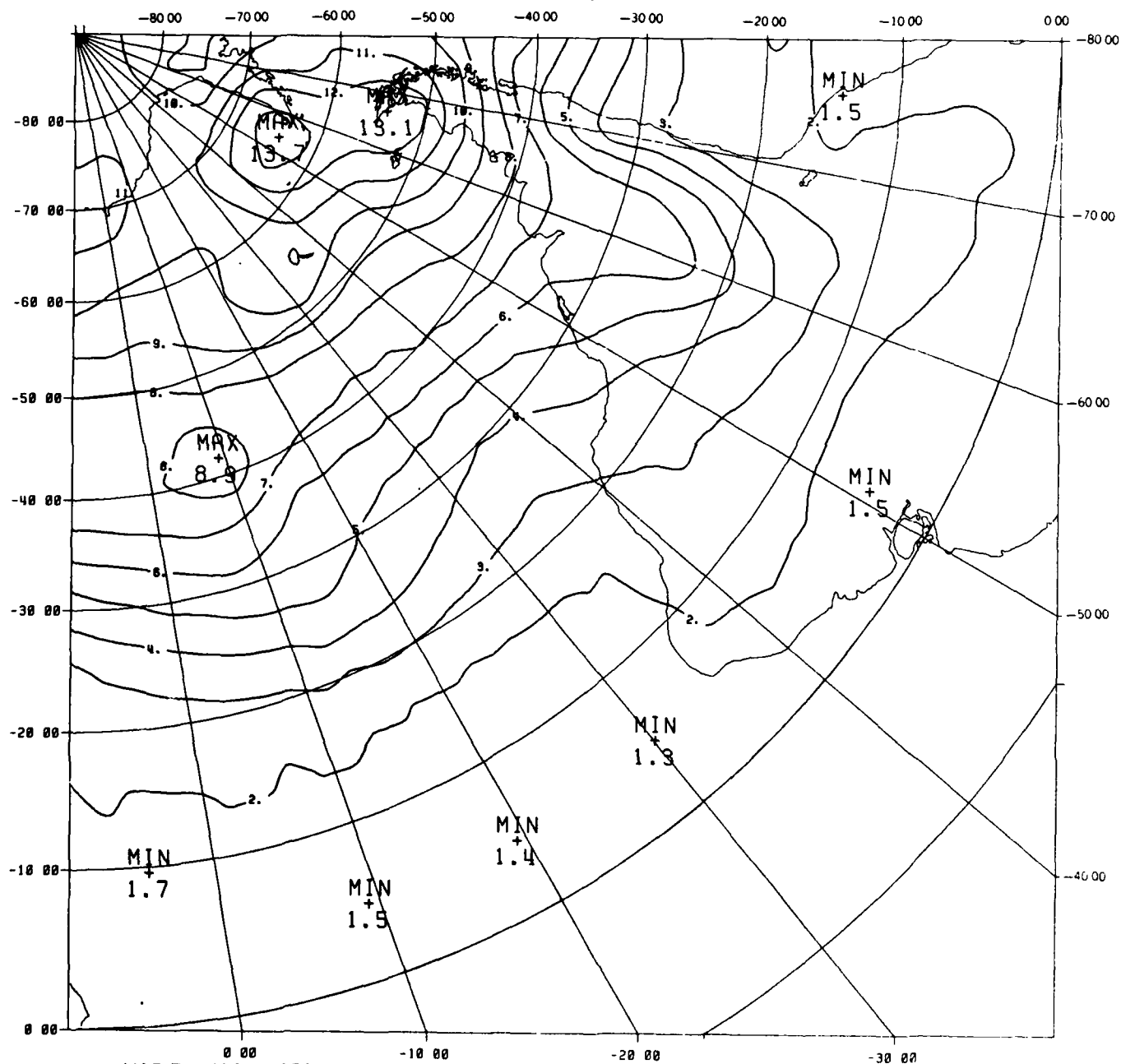
FIGURE B-56



UAIIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FOURTH QUADRANT

JULY
MEAN SEA LEVEL
PRESSURE, MILLIBARS

FIGURE B-57

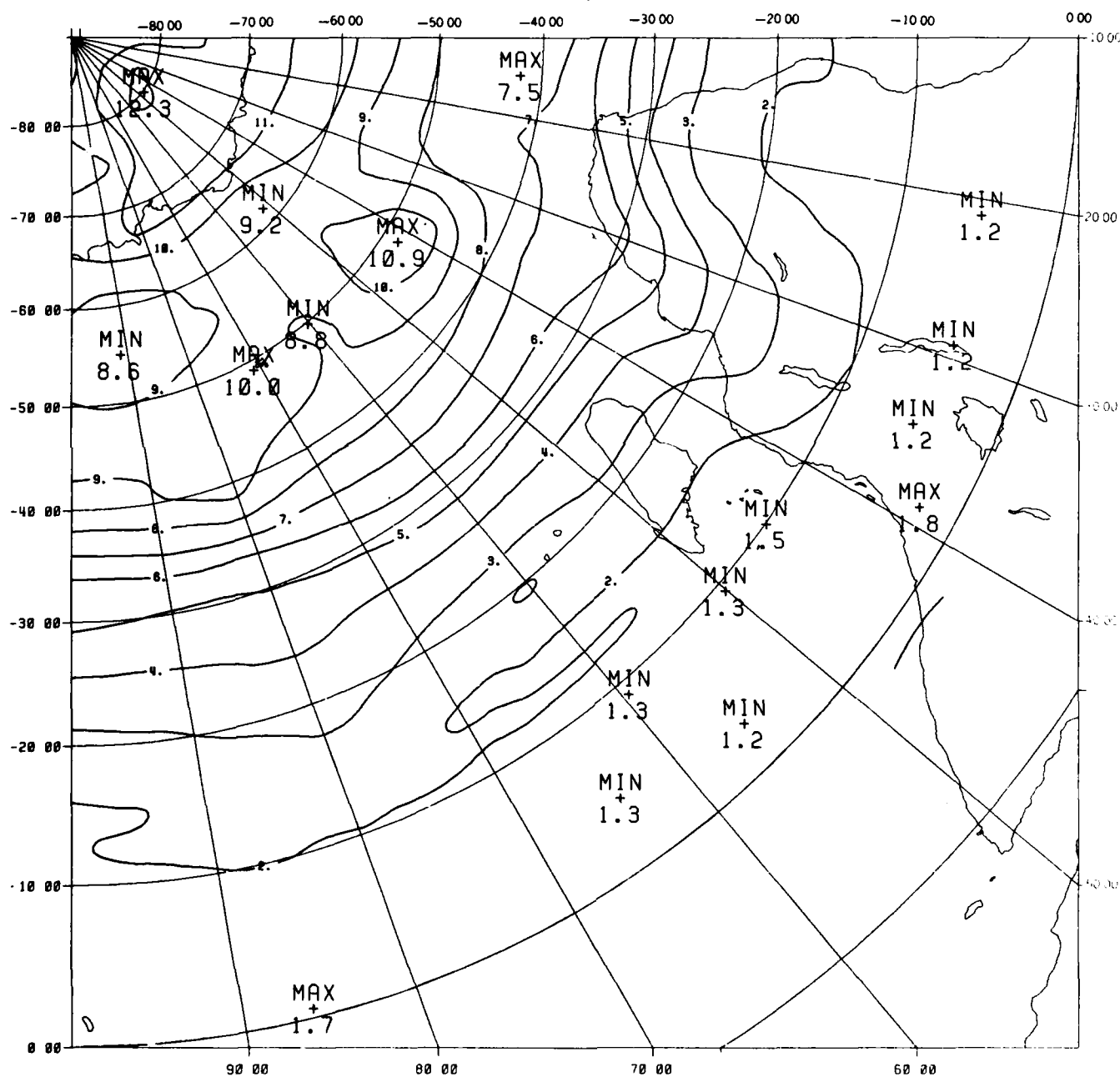


UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FIRST QUADRANT

AUGUST
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

AUGUST
MEAN SEA LEVEL
PRESSURE, MILLIBARS

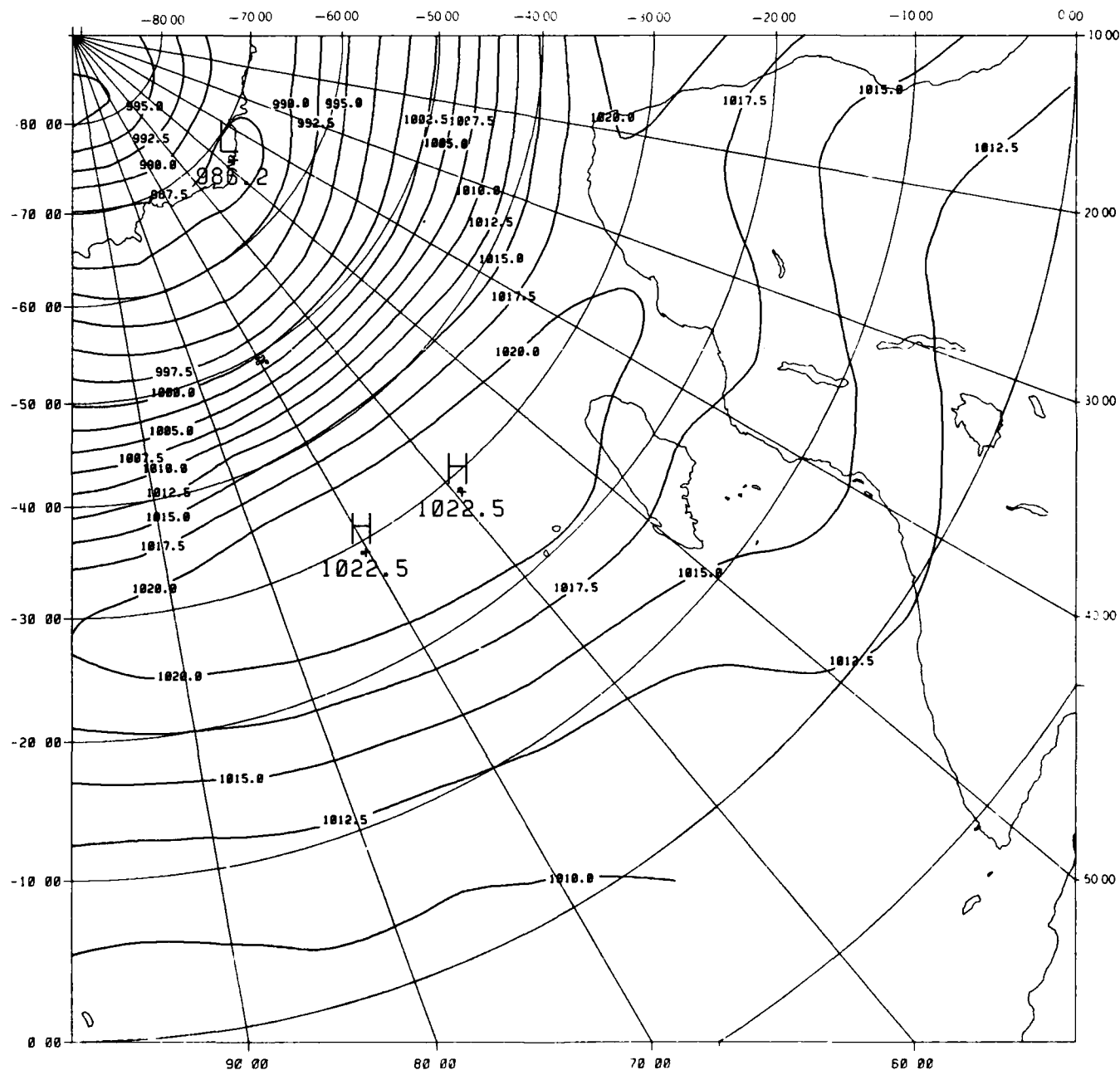
FIGURE B-59



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
SECOND QUADRANT

AUGUST
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

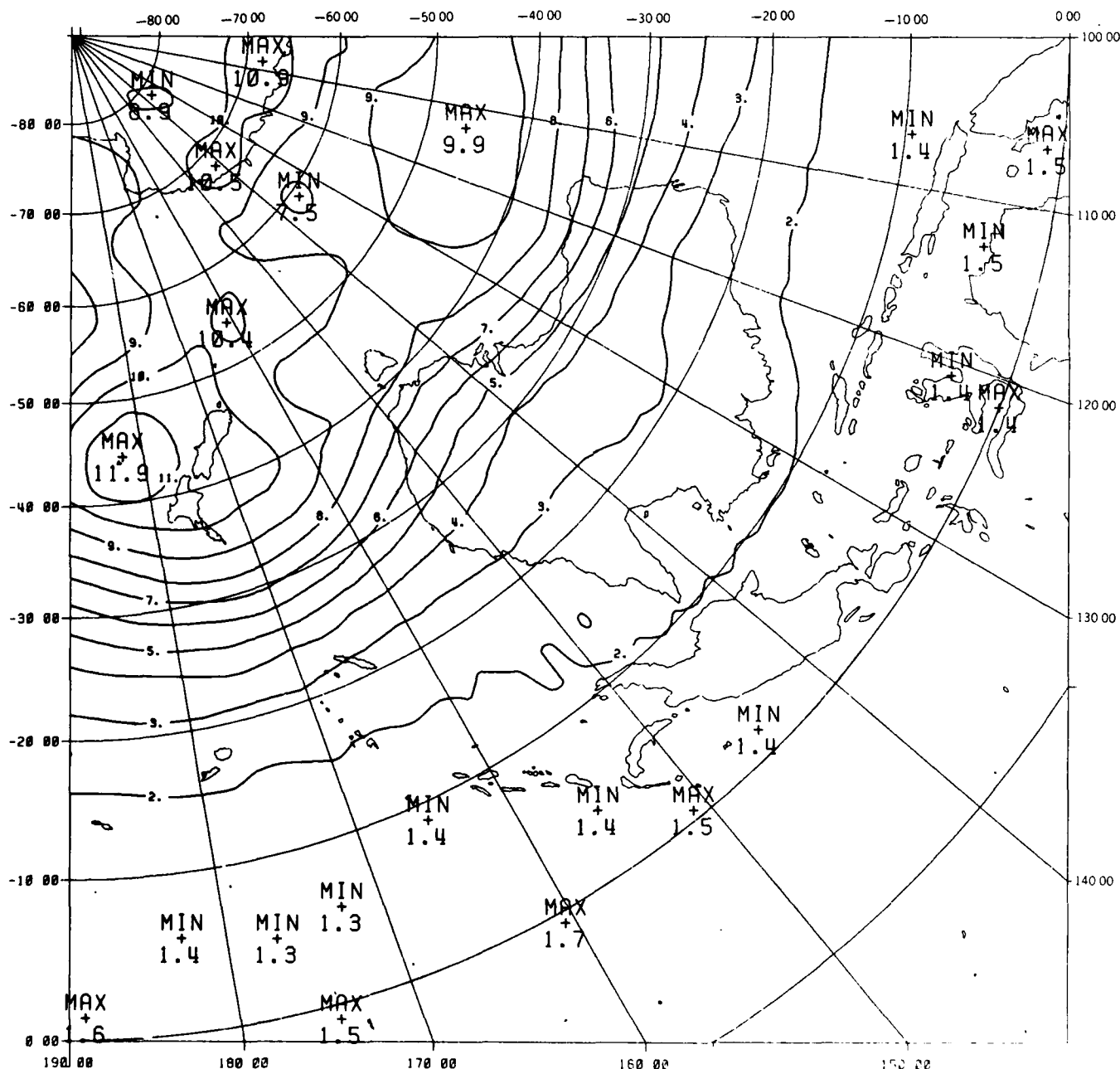
FIGURE B-60



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
SECOND QUADRANT

AUGUST
MEAN SEA LEVEL
PRESSURE, MILLIBARS

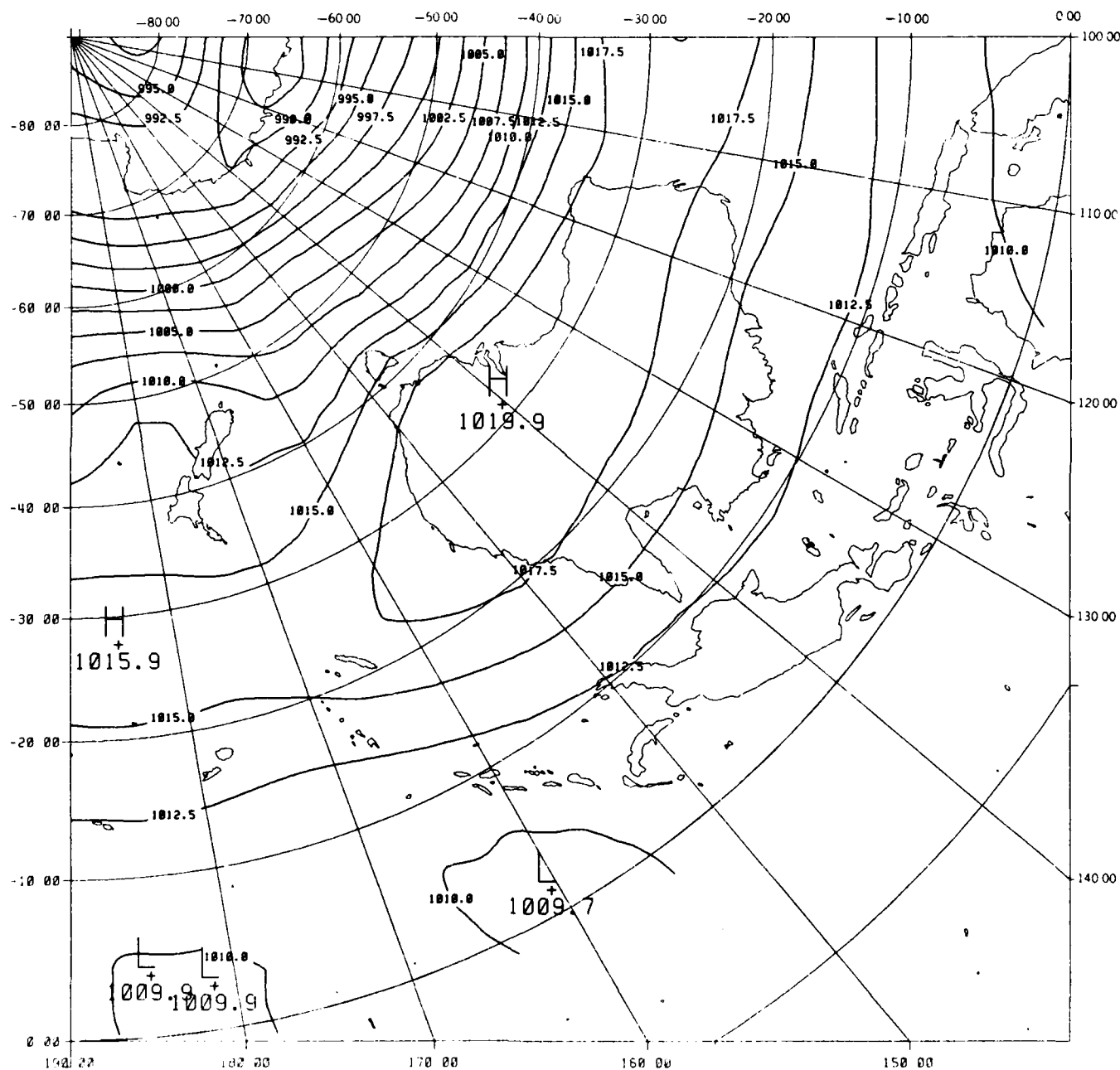
FIGURE B-61



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
THIRD QUADRANT

AUGUST
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

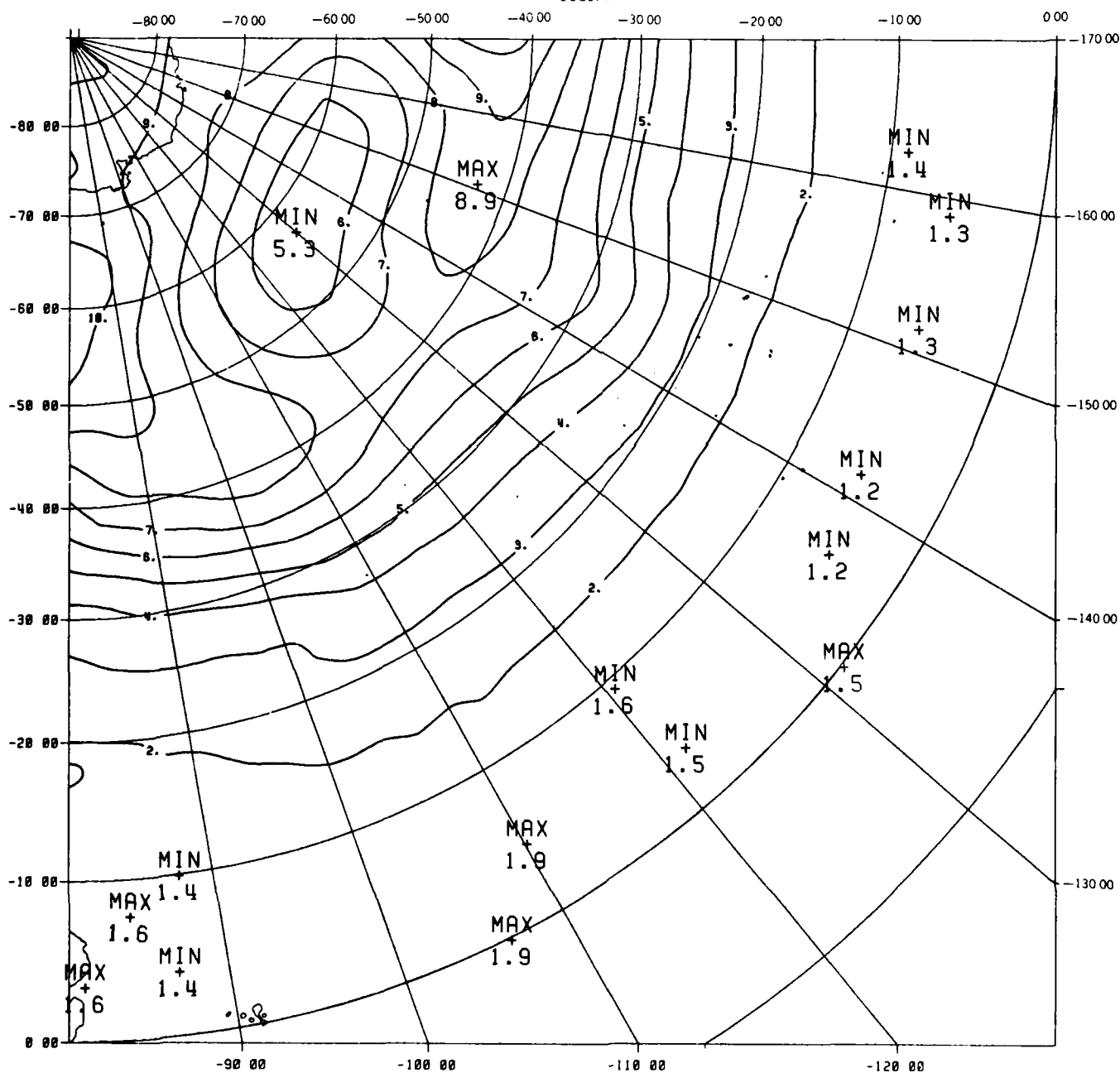
FIGURE B-62



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
THIRD QUADRANT

AUGUST
MEAN SEA LEVEL
PRESSURE, MILLIBARS

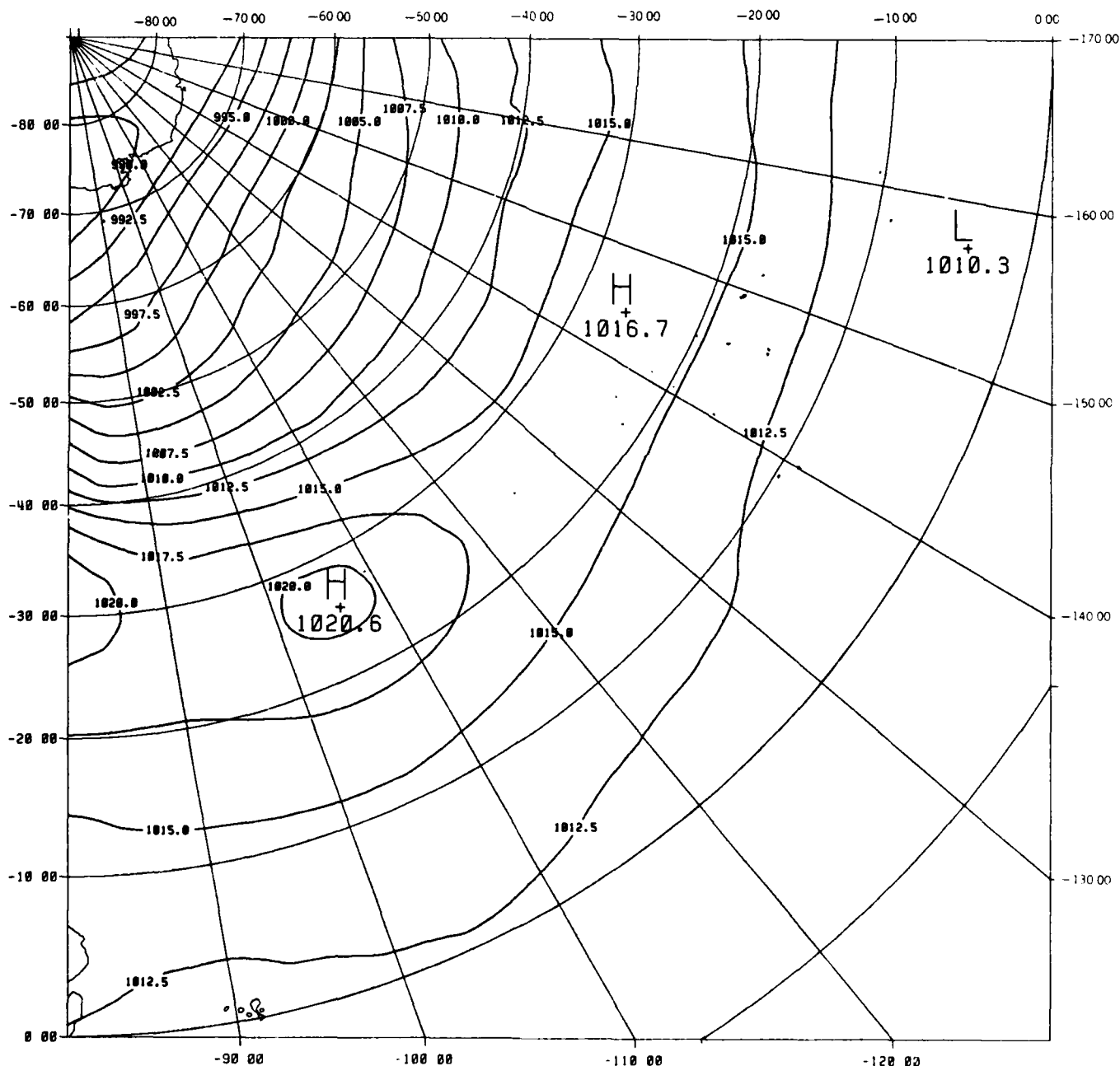
FIGURE B-63



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FOURTH QUADRANT

AUGUST
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

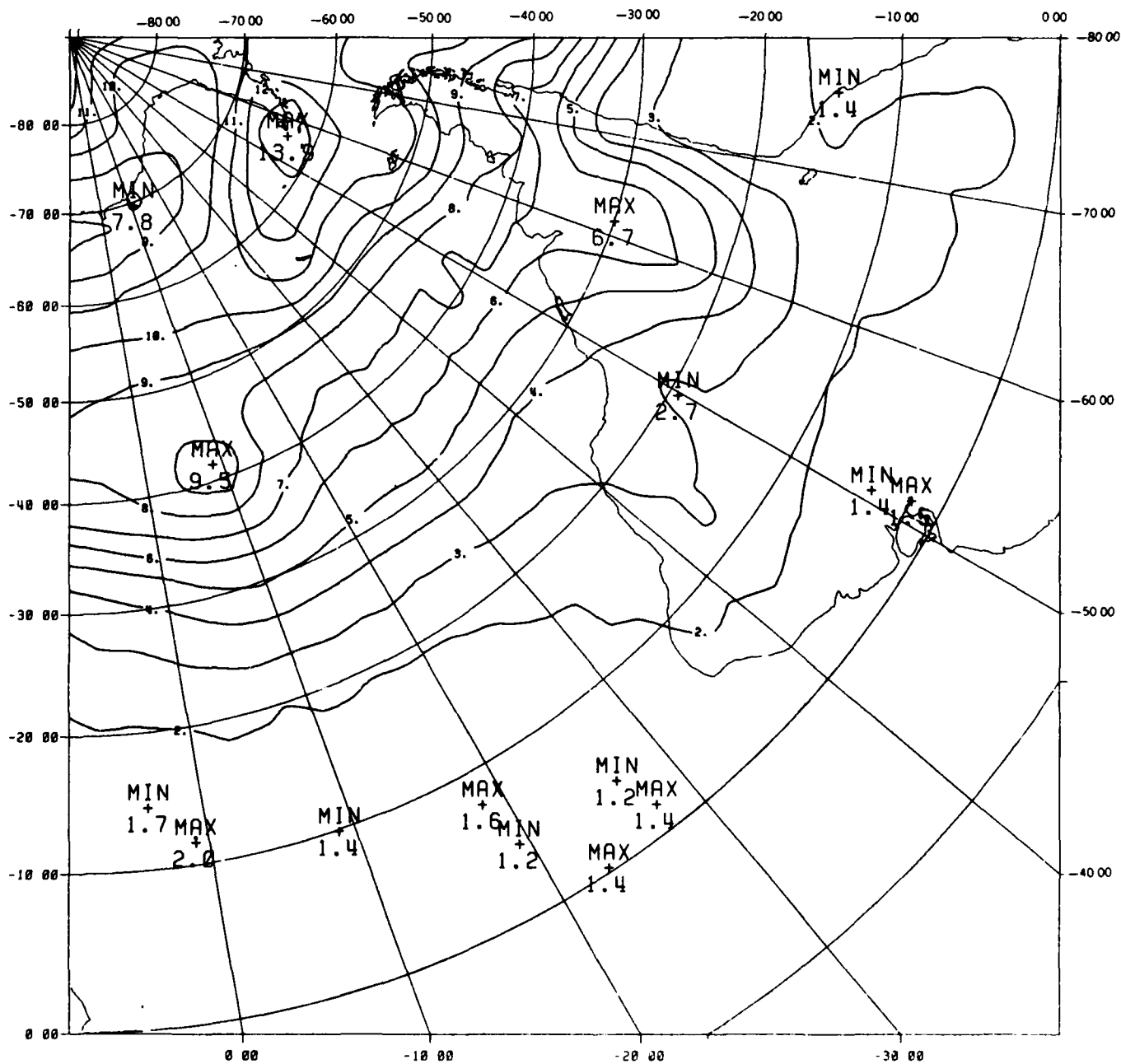
FIGURE B-64



UAIIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FOURTH QUADRANT

AUGUST
MEAN SEA LEVEL
PRESSURE, MILLIBARS

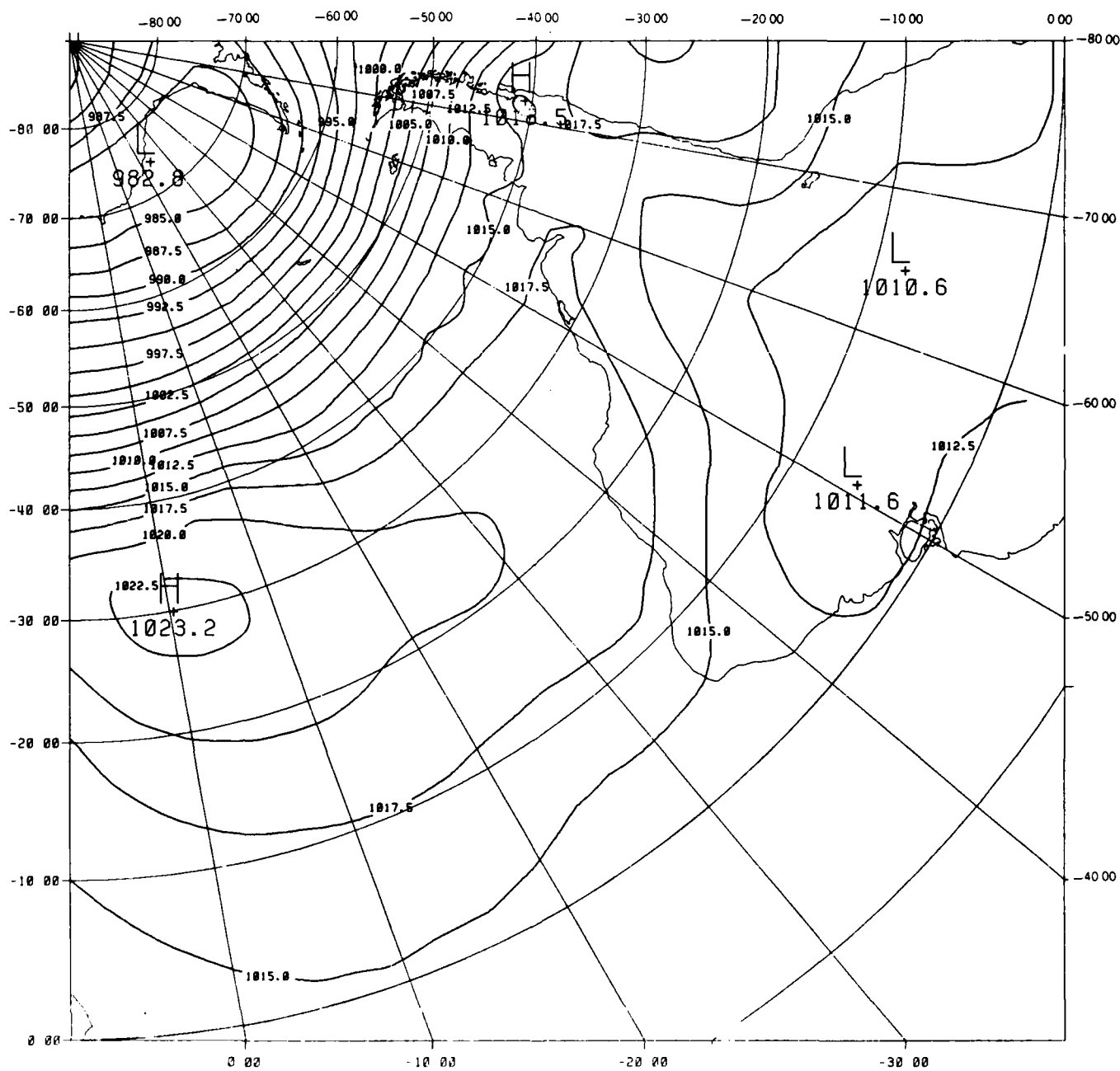
FIGURE B-65



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FIRST QUADRANT

SEPTEMBER
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

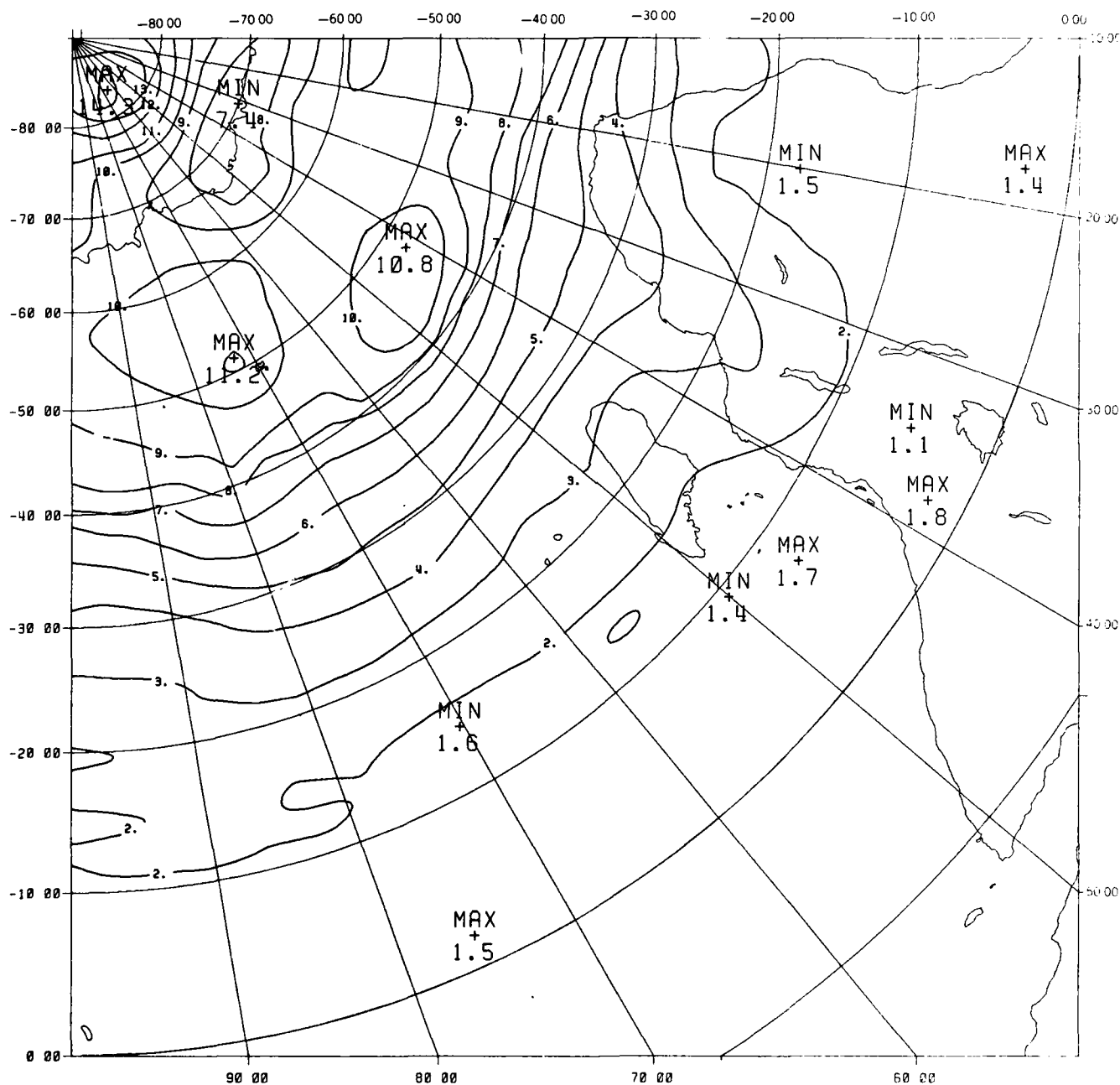
FIGURE B-66



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FIRST QUADRANT

SEPTEMBER
MEAN SEA LEVEL
PRESSURE, MILLIBARS

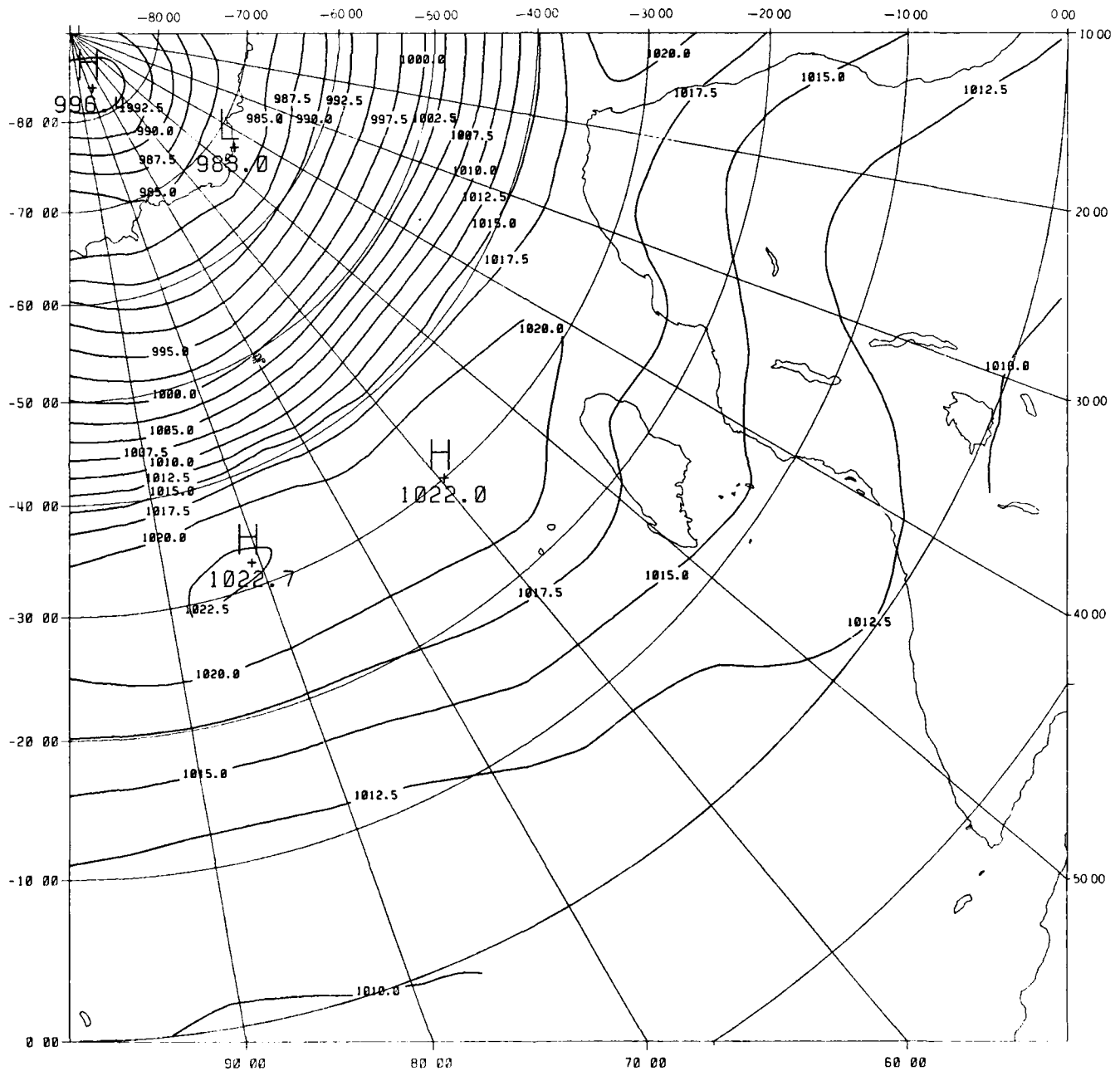
FIGURE B-67



UAPIP (PO 1973-1978)
SOUTHERN HEMISPHERE
SECOND QUADRANT

SEPTEMBER
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

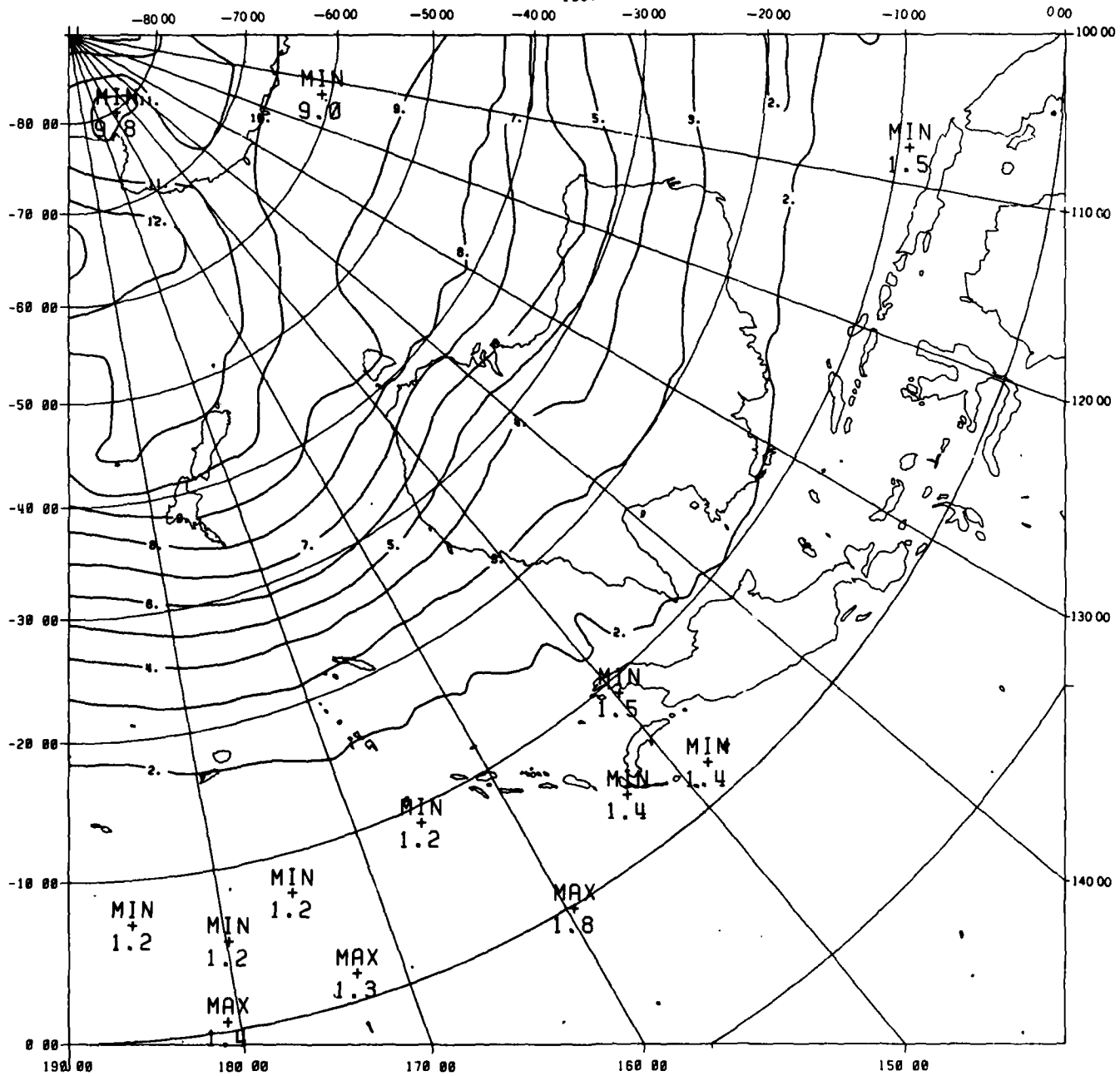
FIGURE B-68



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
SECOND QUADRANT

SEPTEMBER
MEAN SEA LEVEL
PRESSURE, MILLIBARS

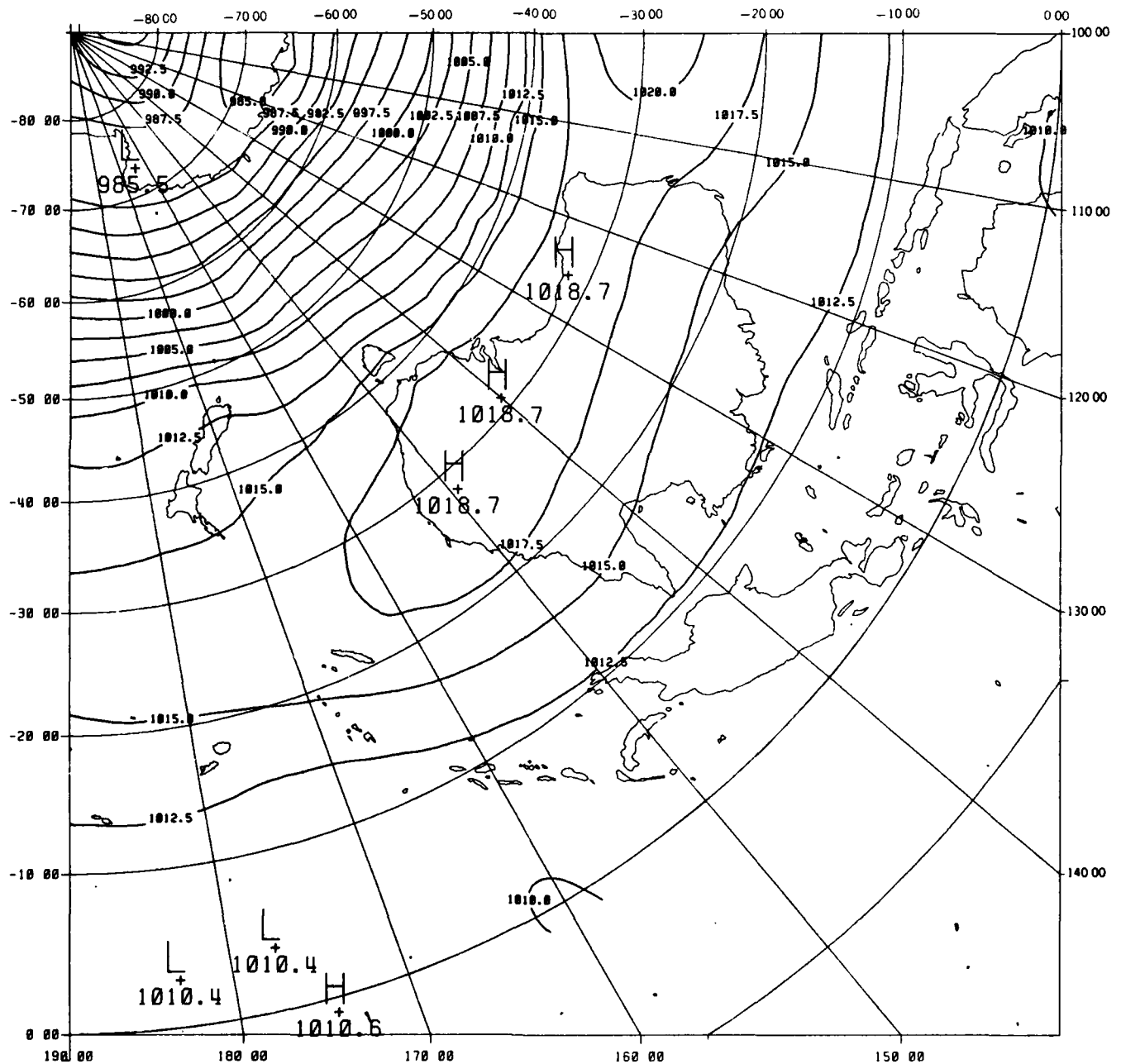
FIGURE B-69



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
THIRD QUADRANT

SEPTEMBER
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

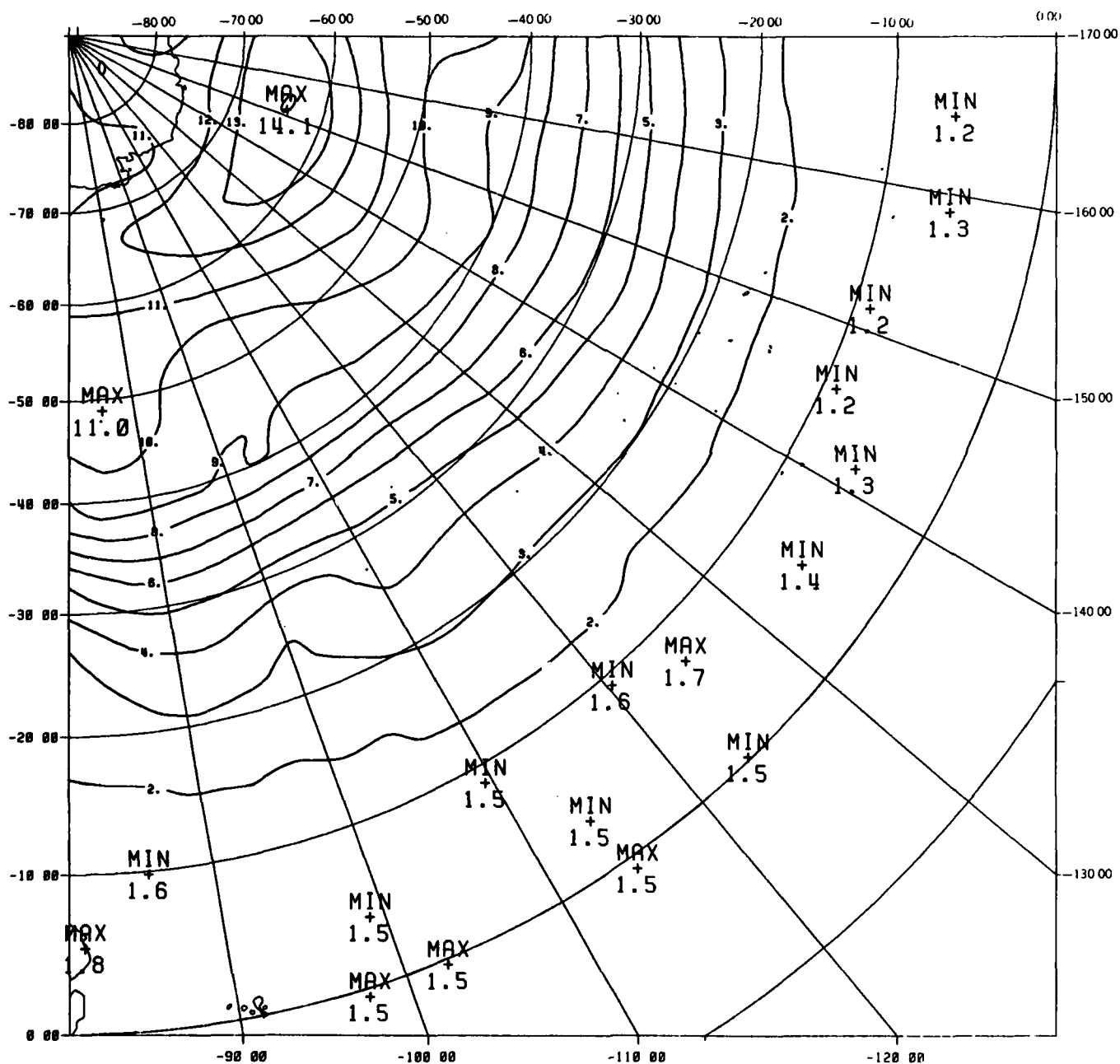
FIGURE B-70



UAIIP (POR 1973-1978)
SOUTHERN HEMISPHERE
THIRD QUADRANT

SEPTEMBER
MEAN SEA LEVEL
PRESSURE, MILLIBARS

FIGURE B-71



UAIIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FOURTH QUADRANT

SEPTEMBER
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

FIGURE B-72

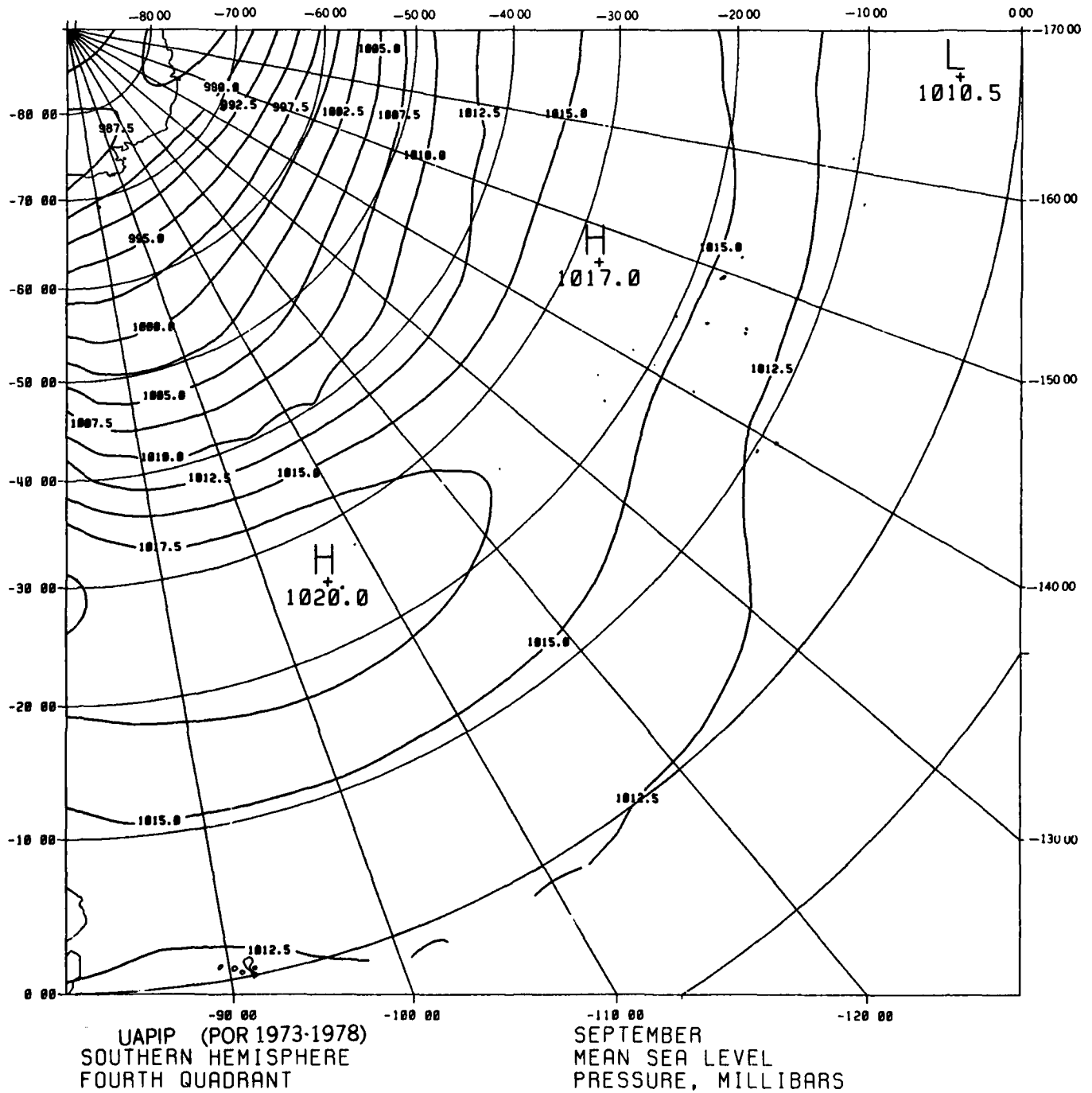
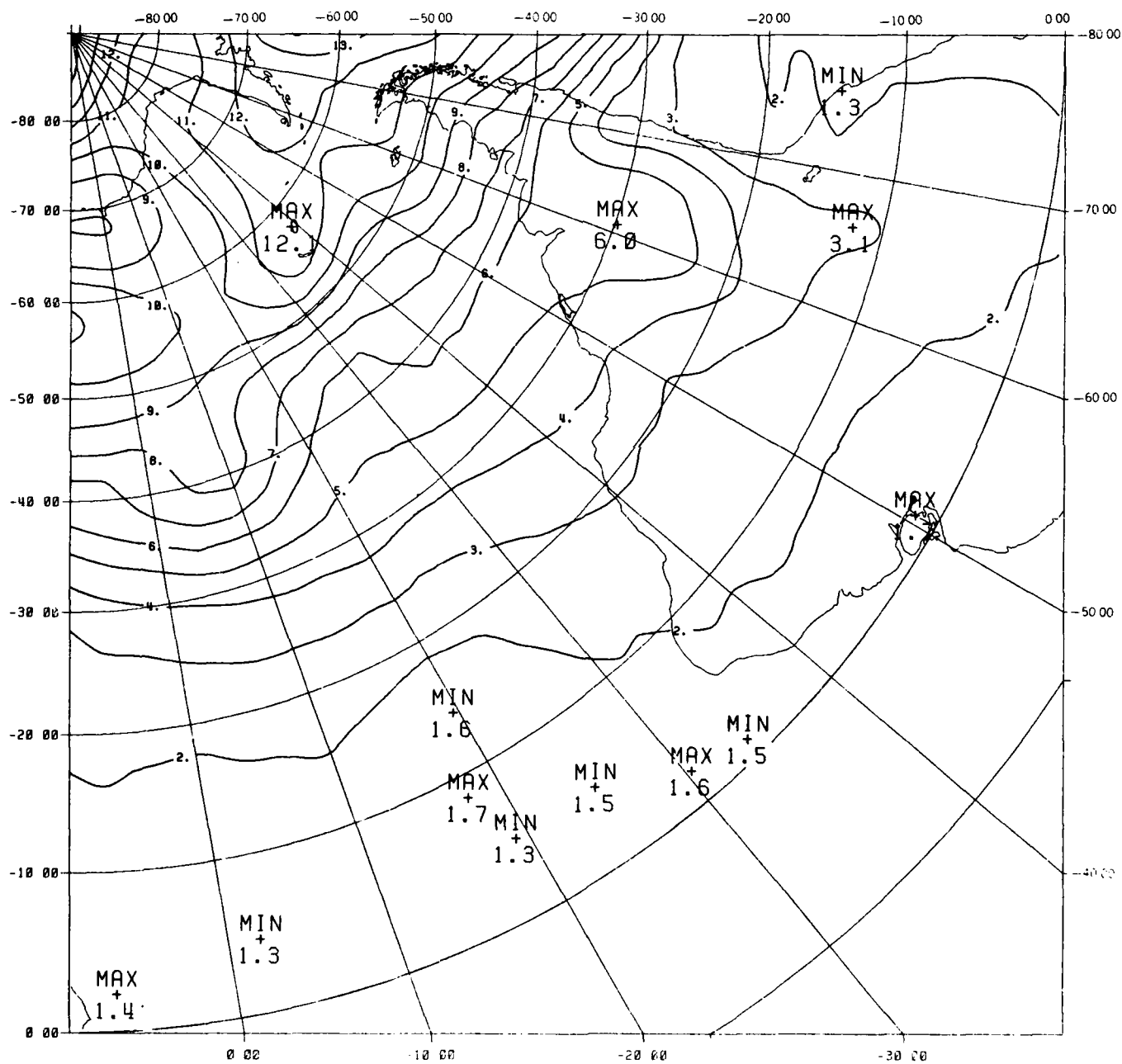


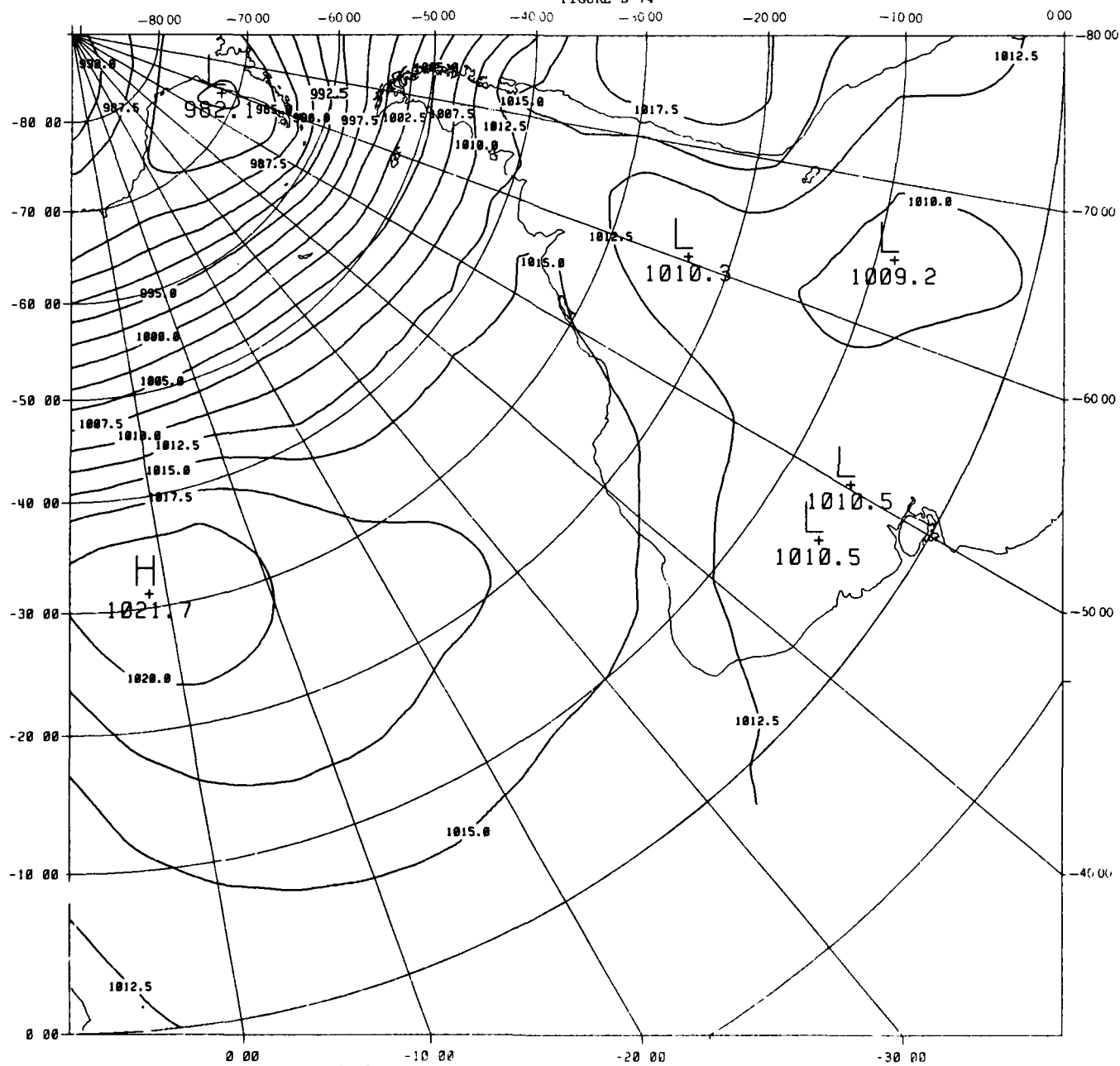
FIGURE B-73



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FIRST QUADRANT

OCTOBER
MEAN SEA LEVEL
SIDEV OF PRESSURE, MILLIBARS

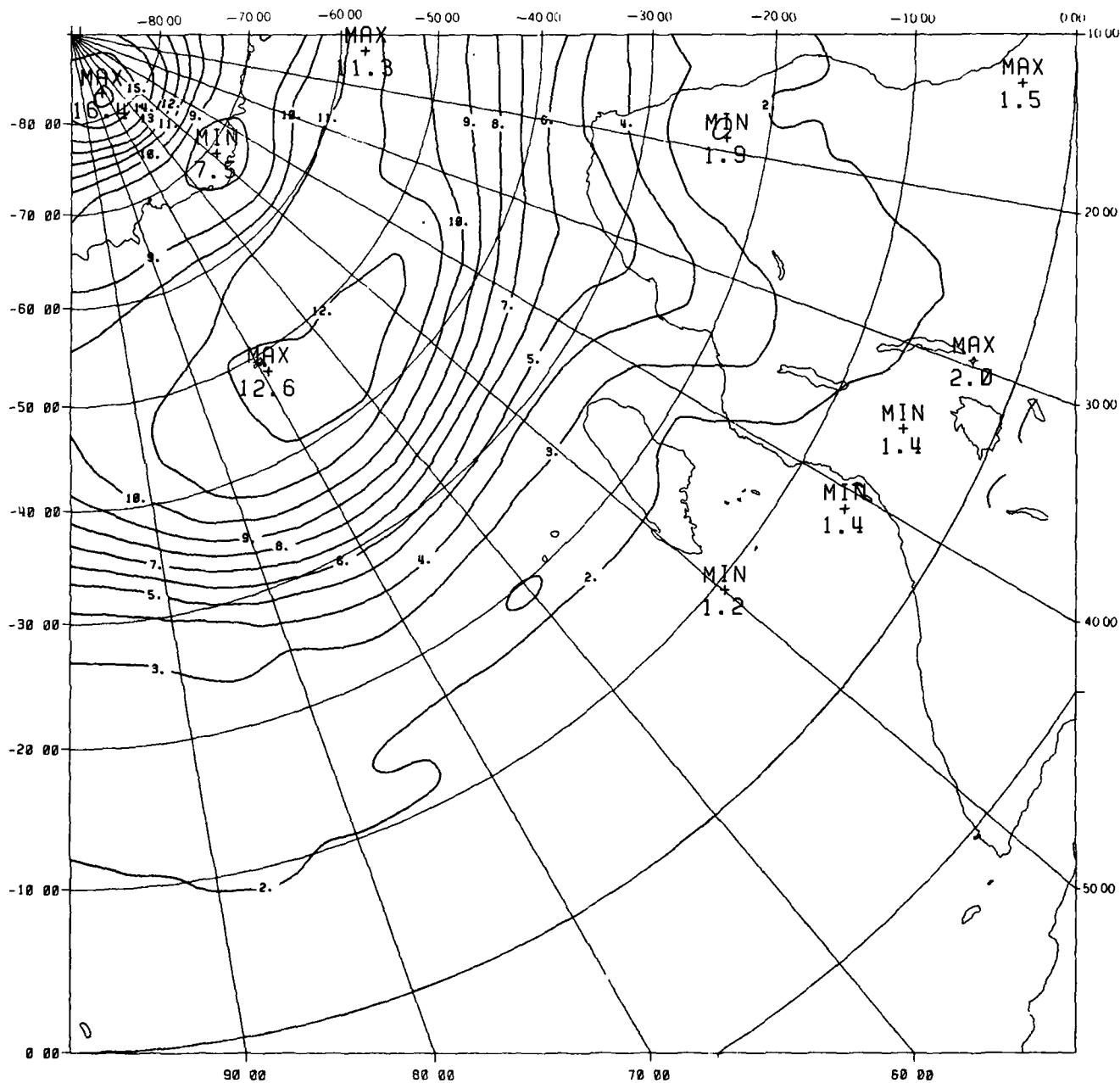
FIGURE B-74



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FIRST QUADRANT

OCTOBER
MEAN SEA LEVEL
PRESSURE, MILLIBARS

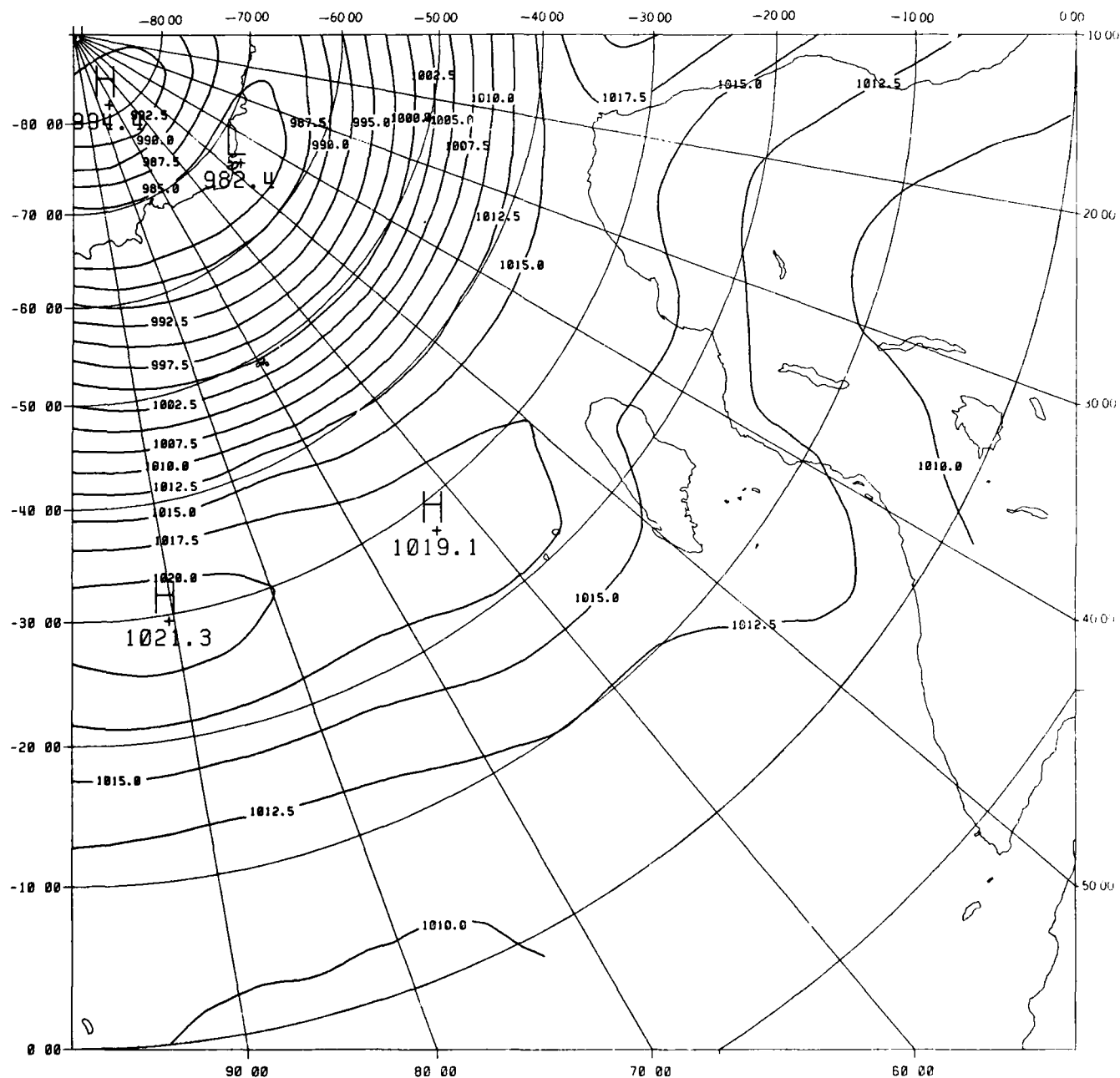
FIGURE B-75



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
SECOND QUADRANT

OCTOBER
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

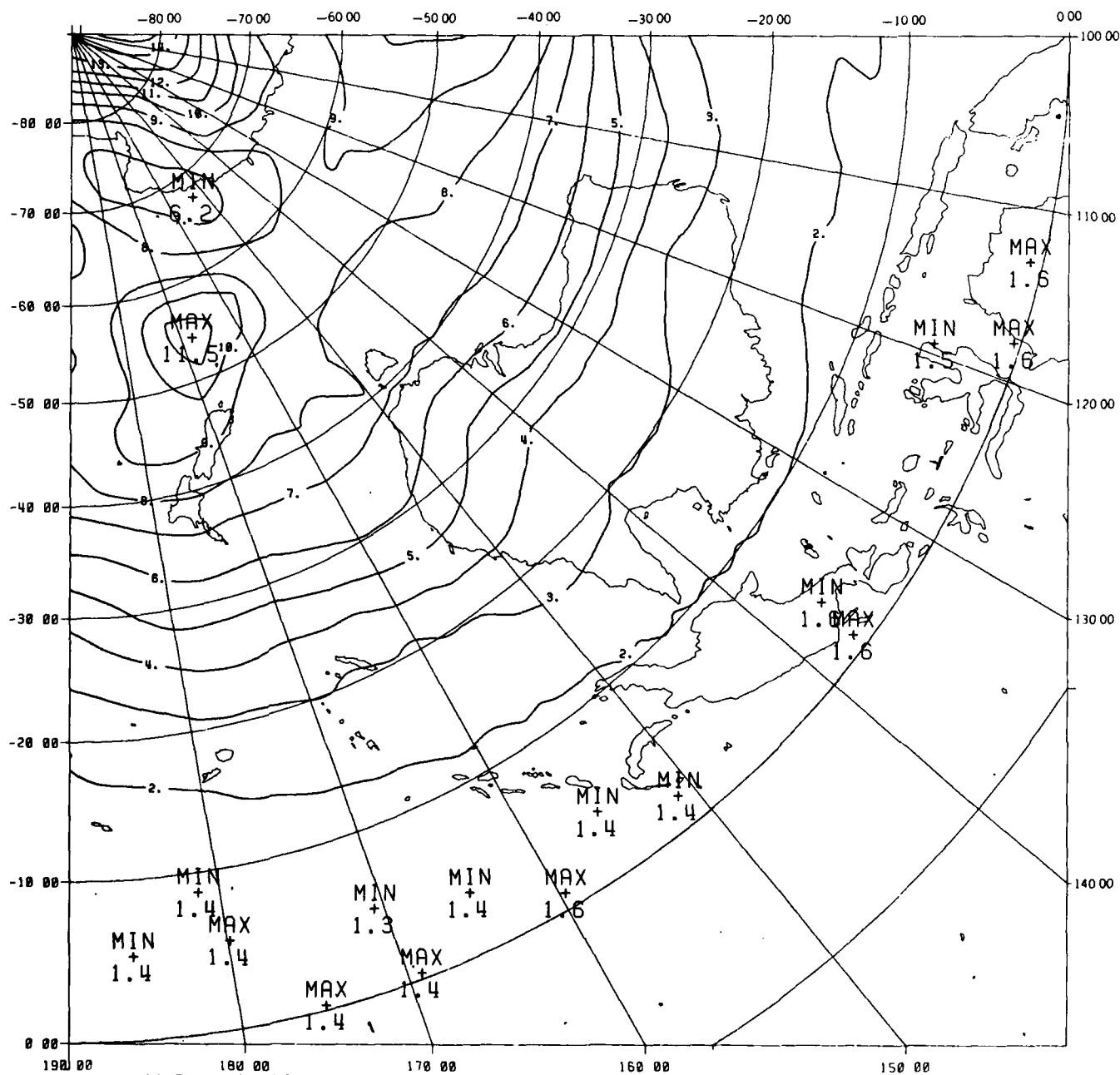
FIGURE B-76



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
SECOND QUADRANT

OCTOBER
MEAN SEA LEVEL
PRESSURE, MILLIBARS

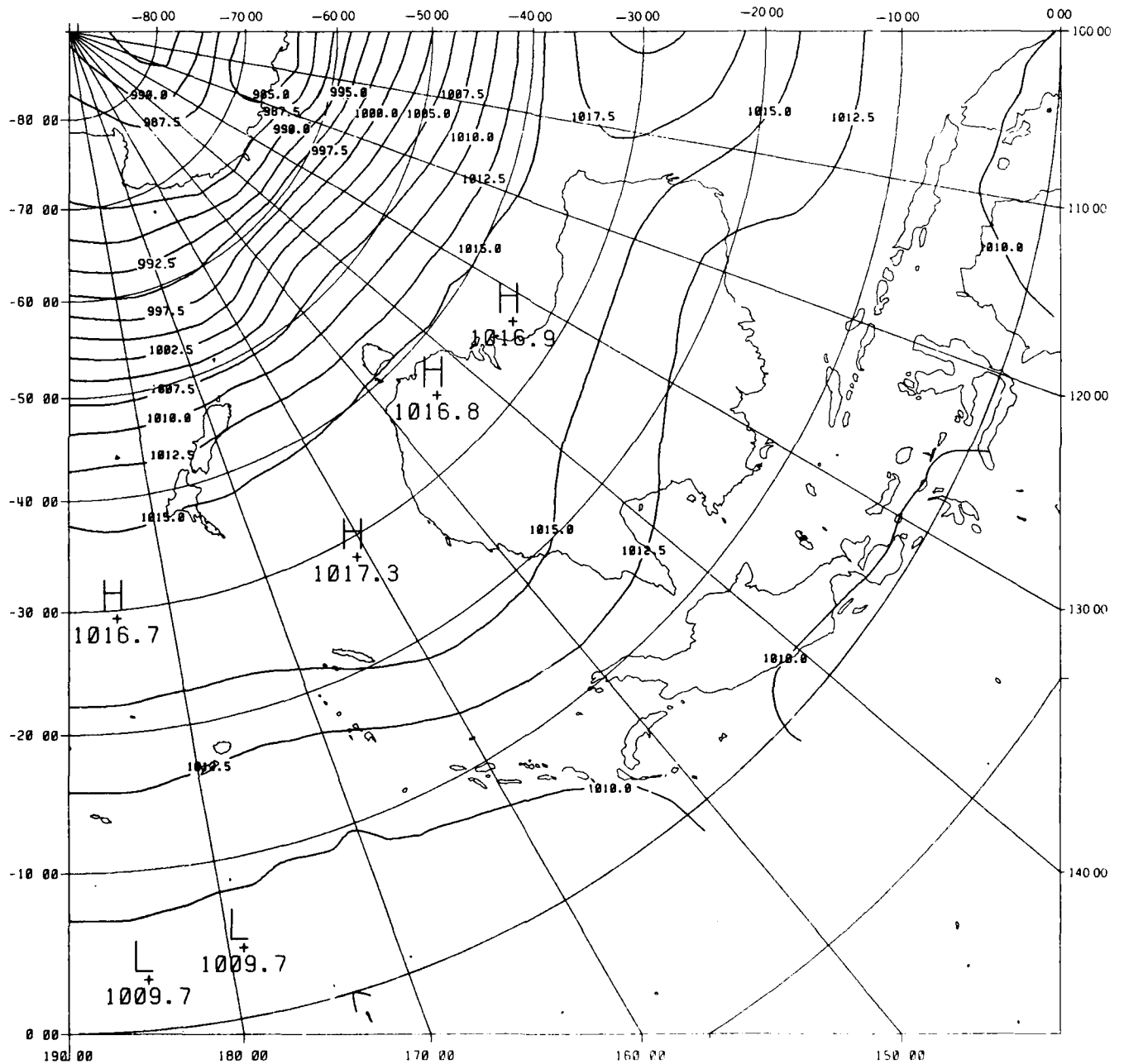
FIGURE B-77



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
THIRD QUADRANT

OCTOBER
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

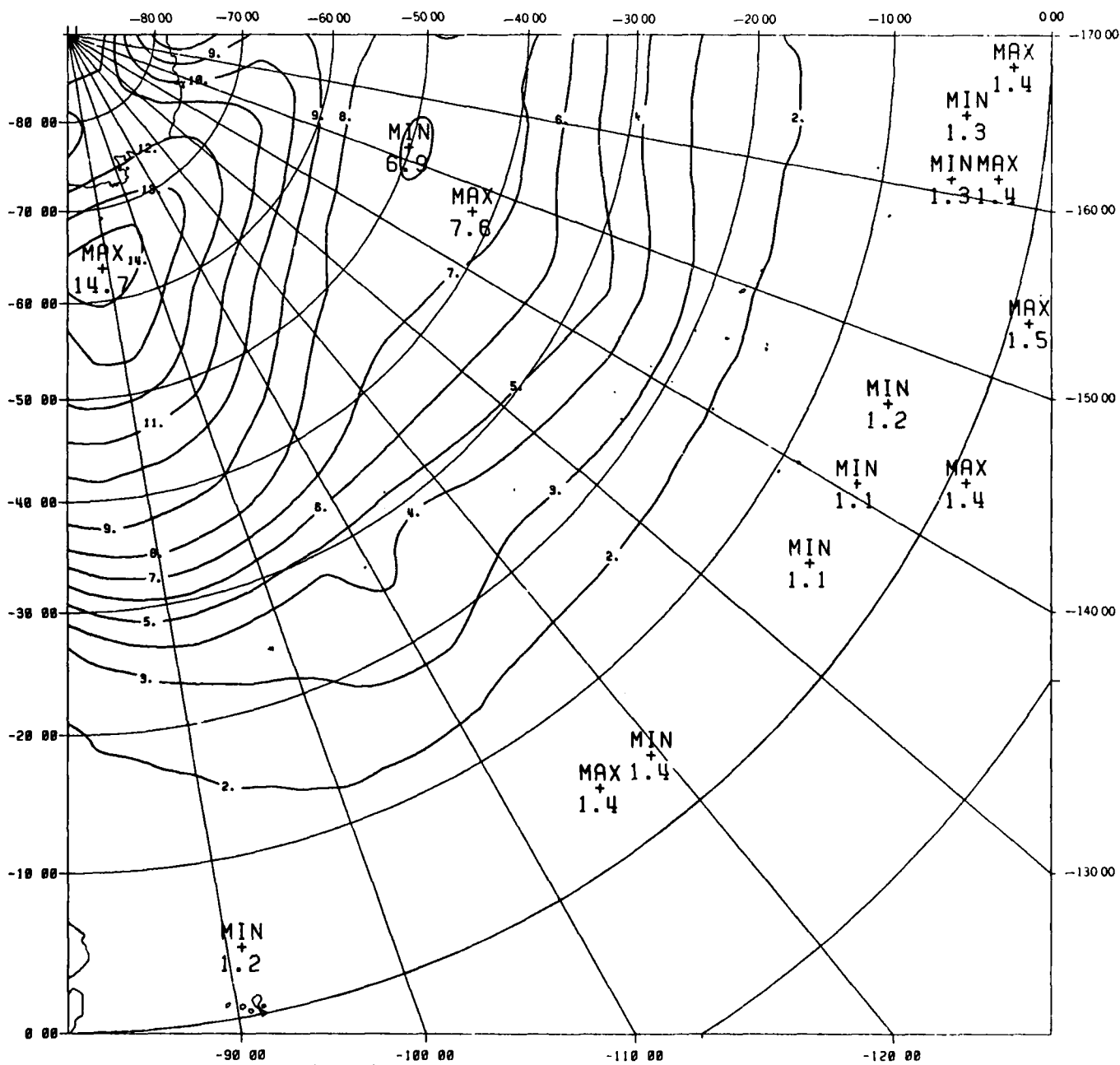
FIGURE B-78



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
THIRD QUADRANT

OCTOBER
MEAN SEA LEVEL
PRESSURE, MILLIBARS

FIGURE B-79



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FOURTH QUADRANT

OCTOBER
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

AD-A130 207

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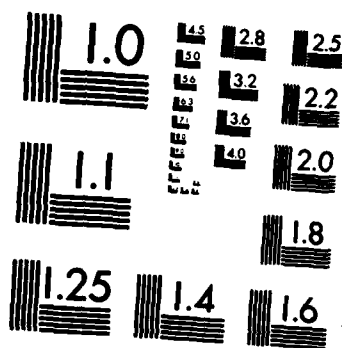
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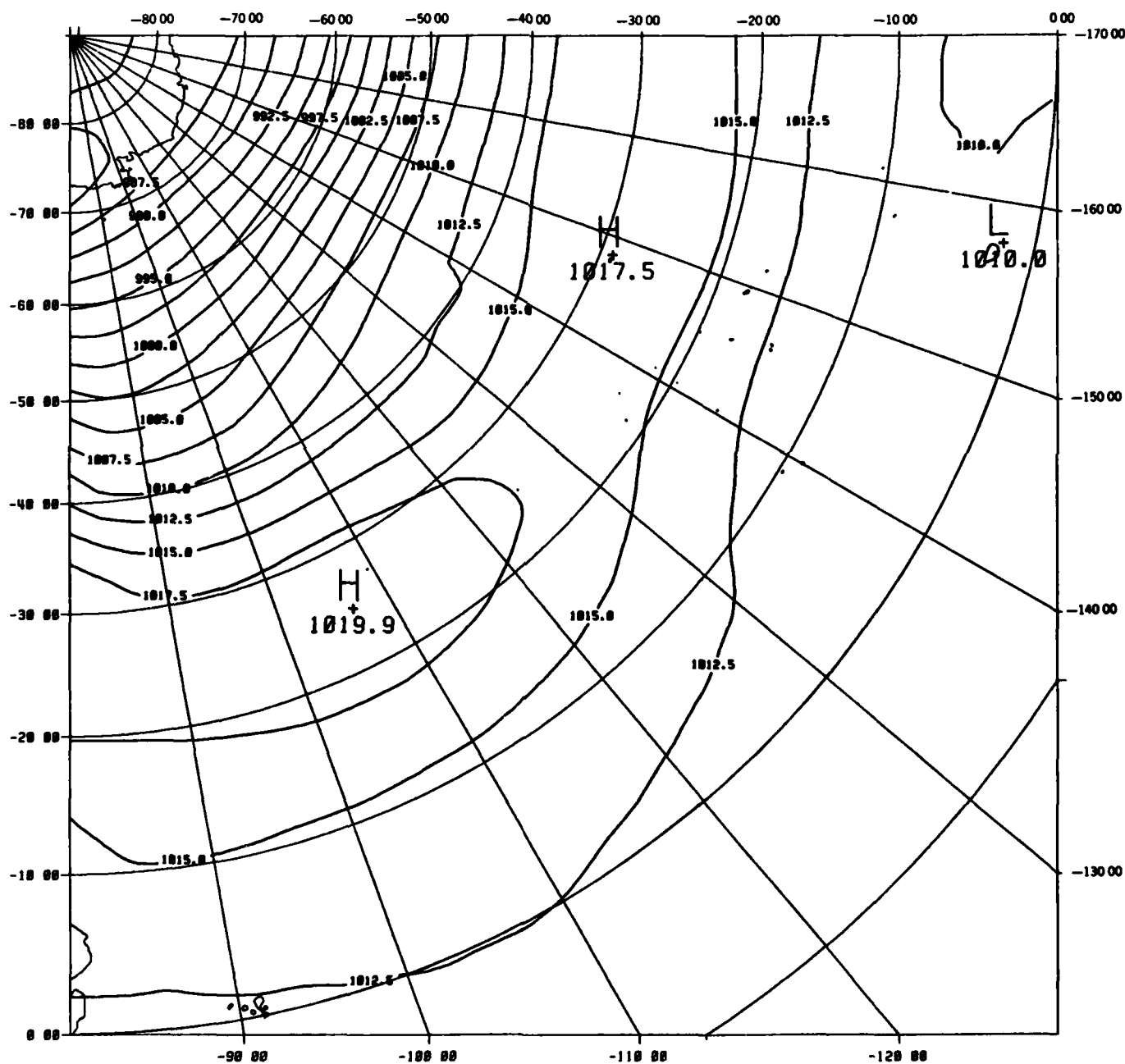
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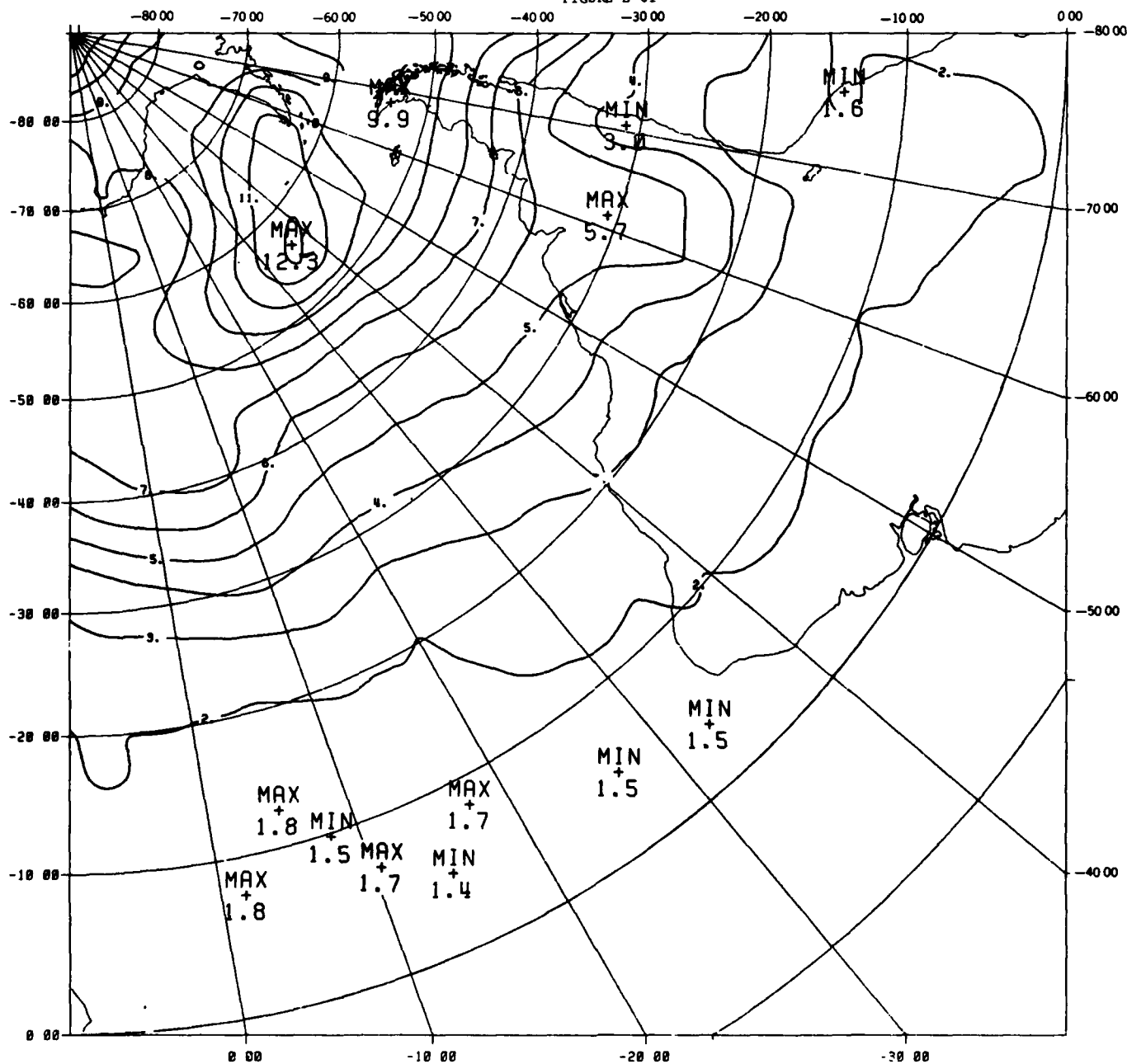
FIGURE B-80



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FOURTH QUADRANT

OCTOBER
MEAN SEA LEVEL
PRESSURE, MILLIBARS

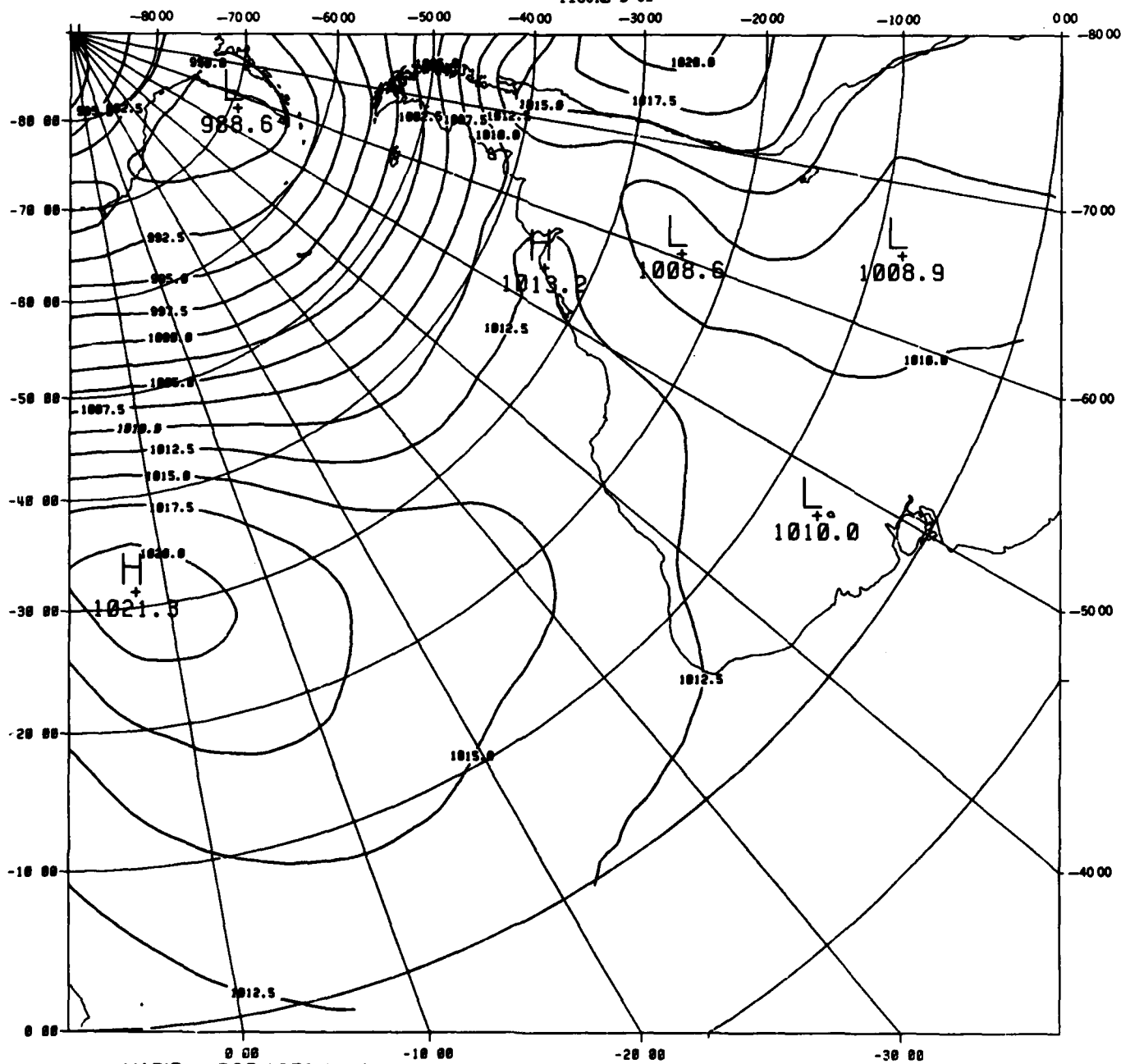
FIGURE B-81



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FIRST QUADRANT

NOVEMBER
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

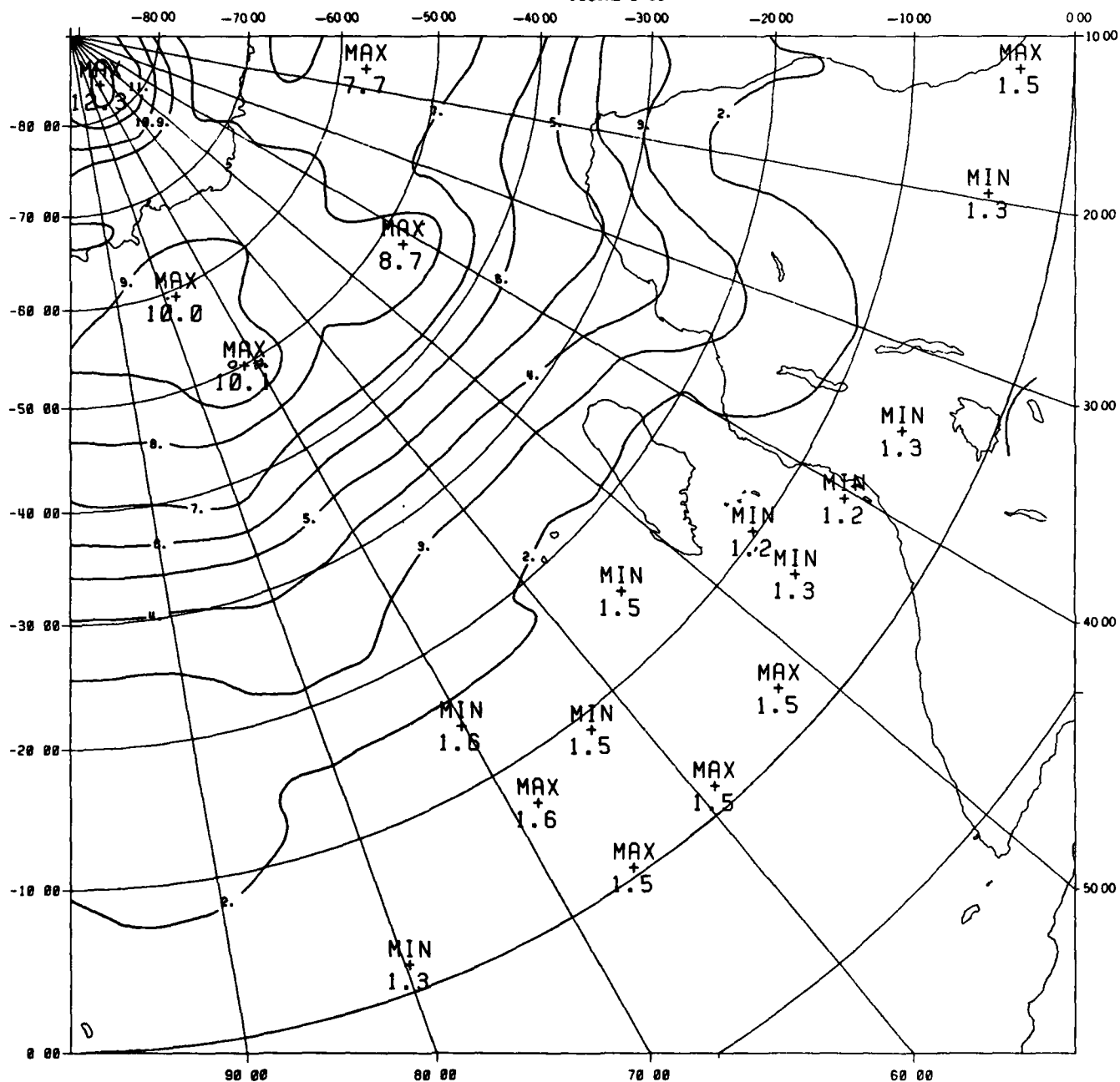
FIGURE B-82



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FIRST QUADRANT

NOVEMBER
MEAN SEA LEVEL
PRESSURE, MILLIBARS

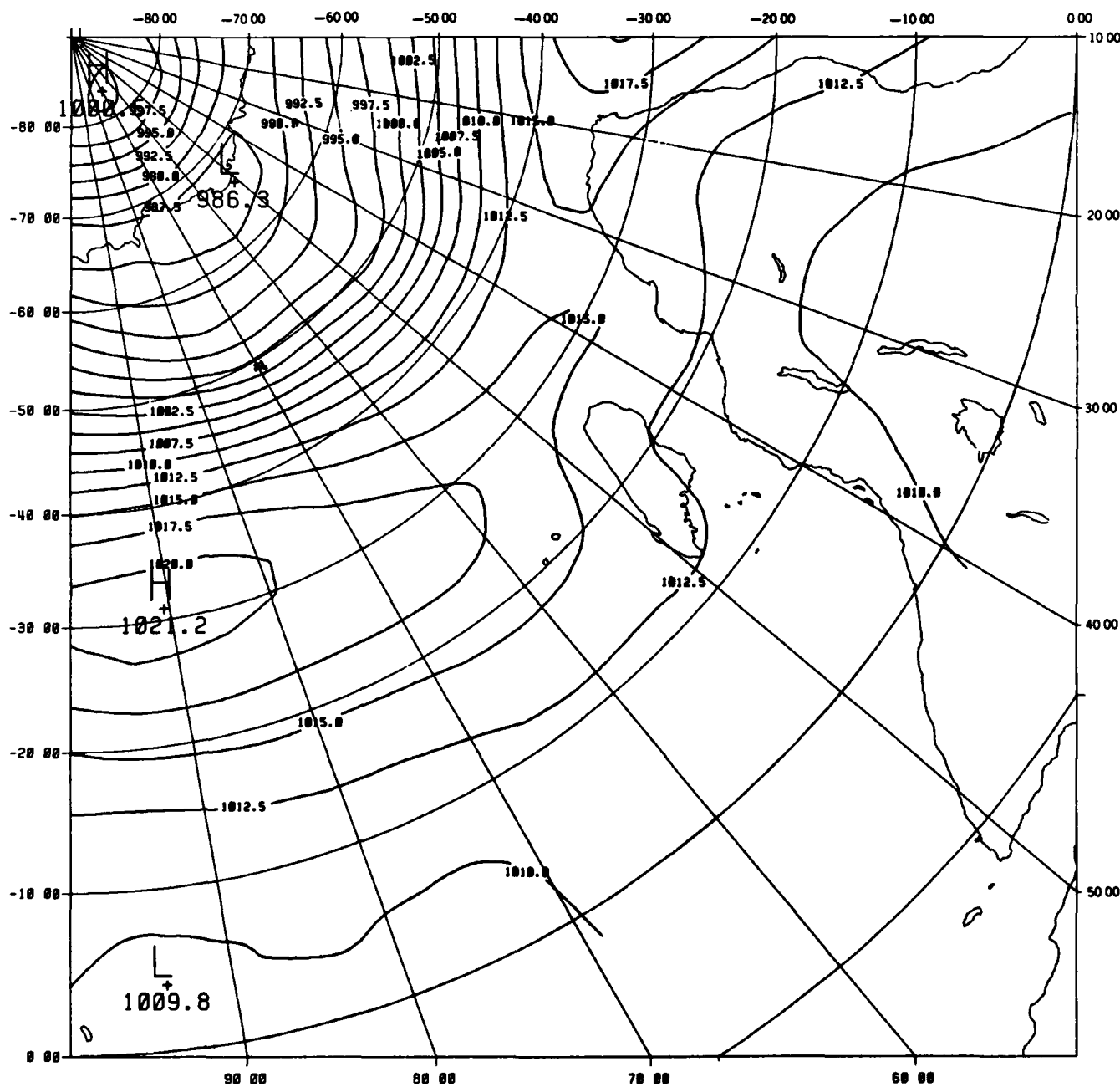
FIGURE B-83



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
SECOND QUADRANT

NOVEMBER
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

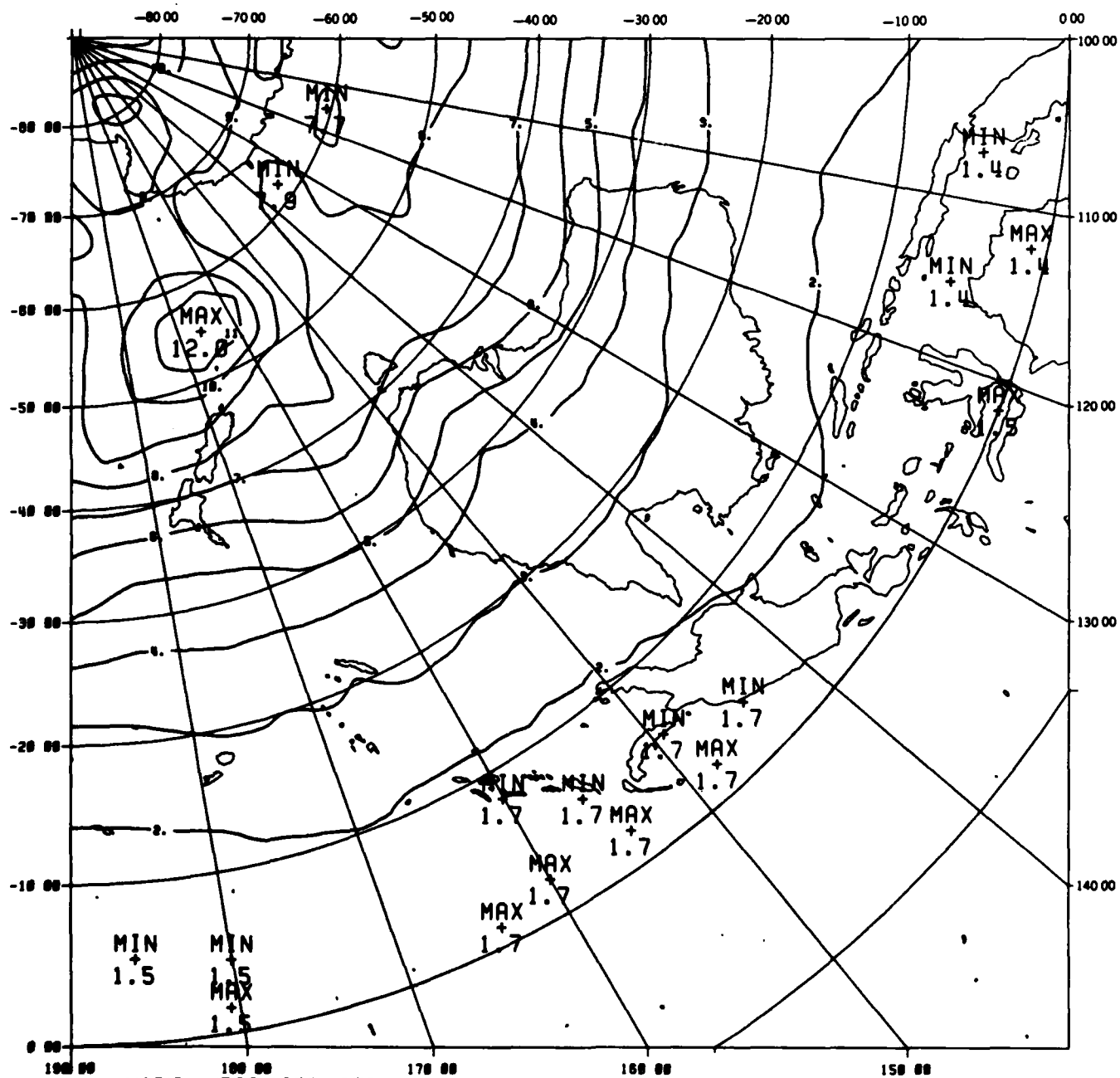
FIGURE B-84



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
SECOND QUADRANT

NOVEMBER
MEAN SEA LEVEL
PRESSURE, MILLIBARS

FIGURE B-85



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
THIRD QUADRANT

NOVEMBER
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

FIGURE B-86

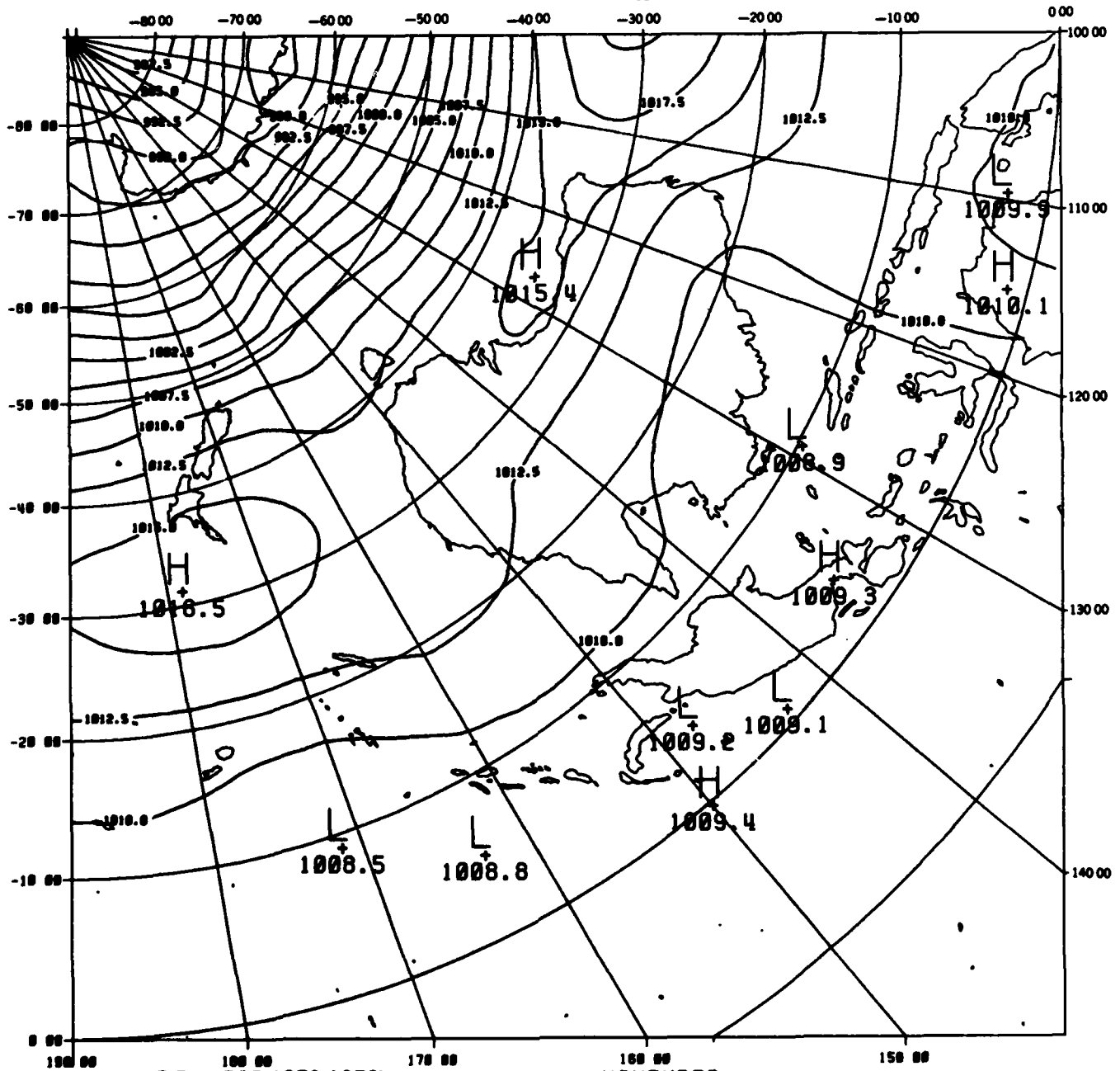
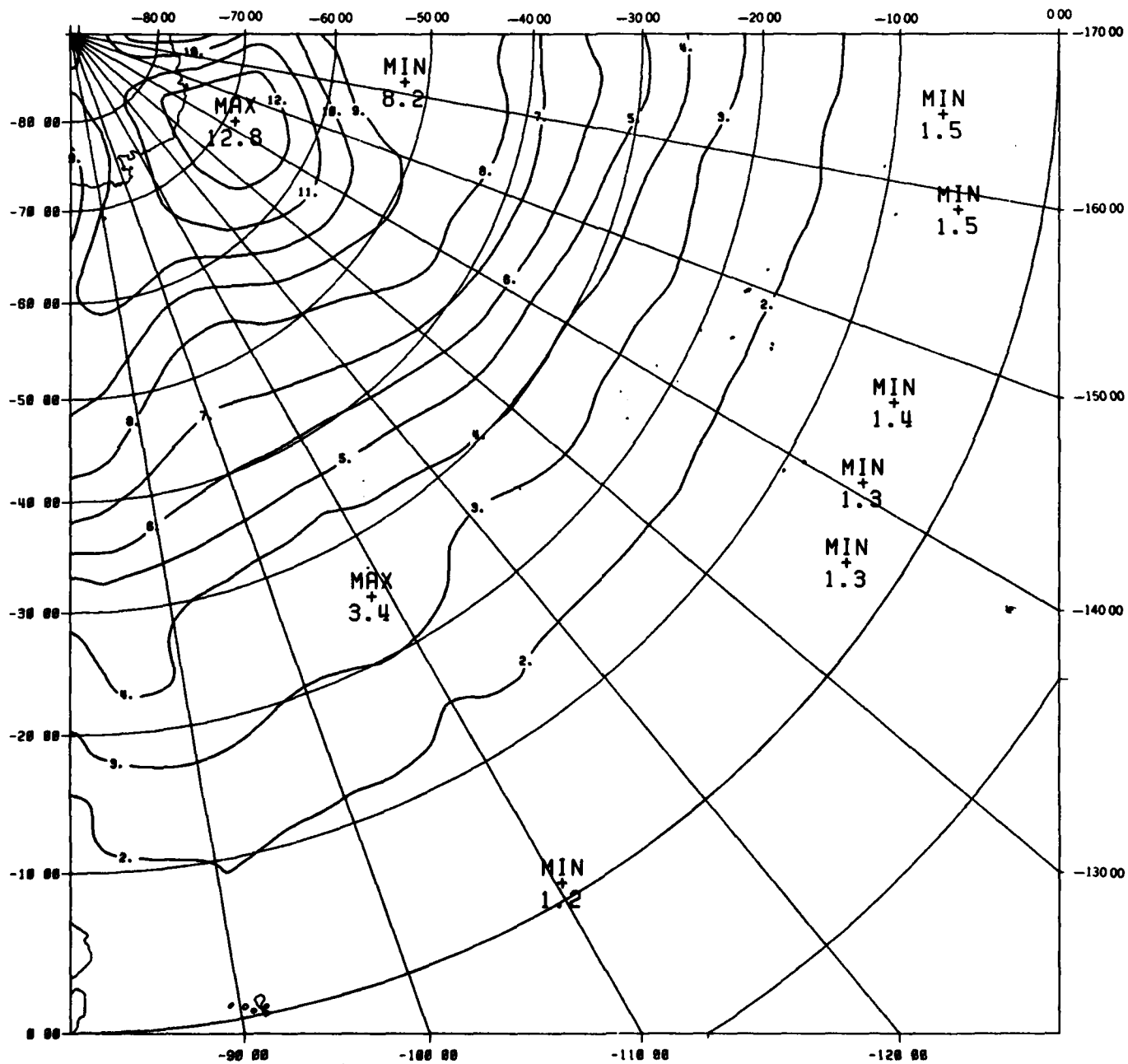


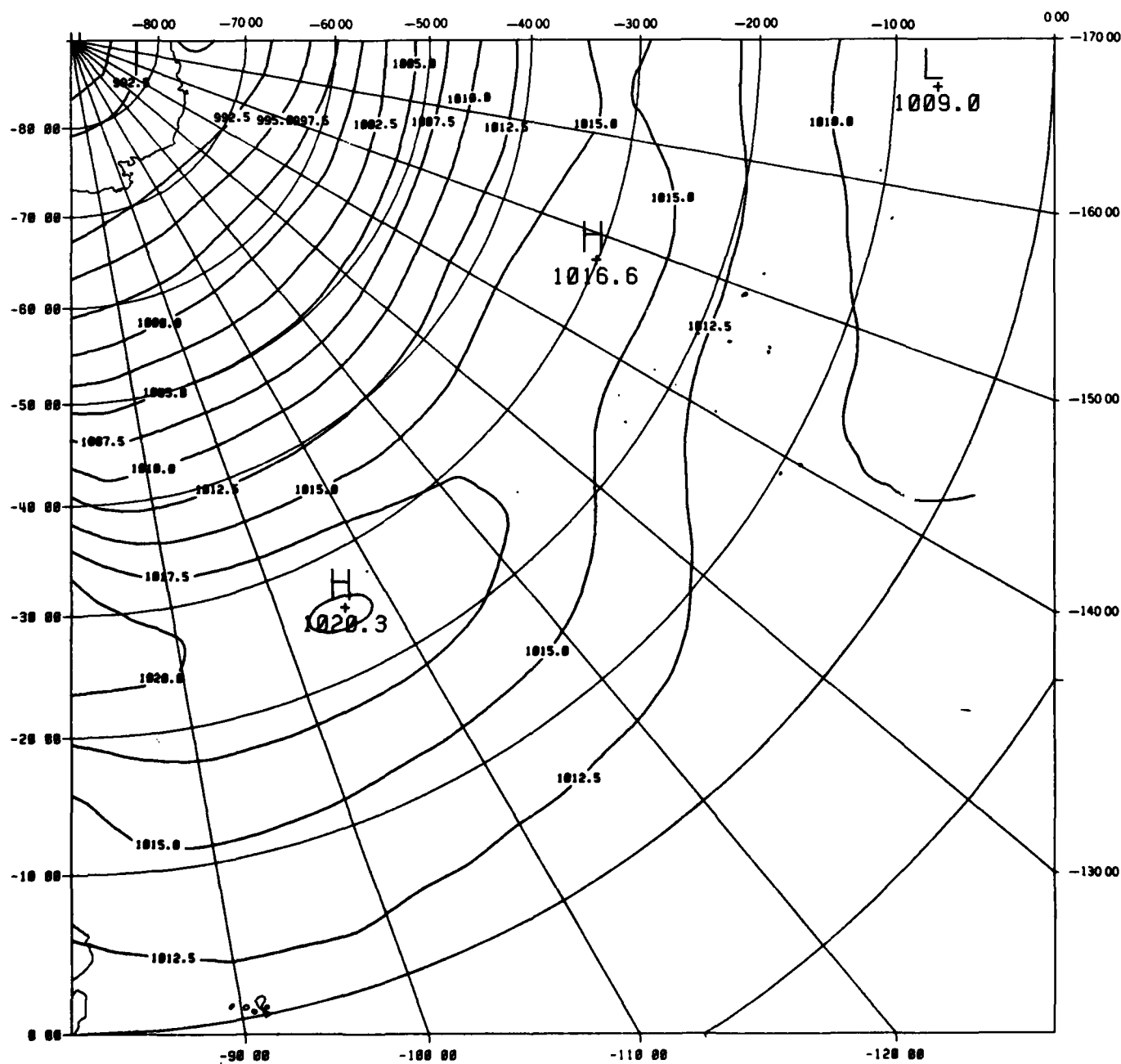
FIGURE B-87



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FOURTH QUADRANT

NOVEMBER
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

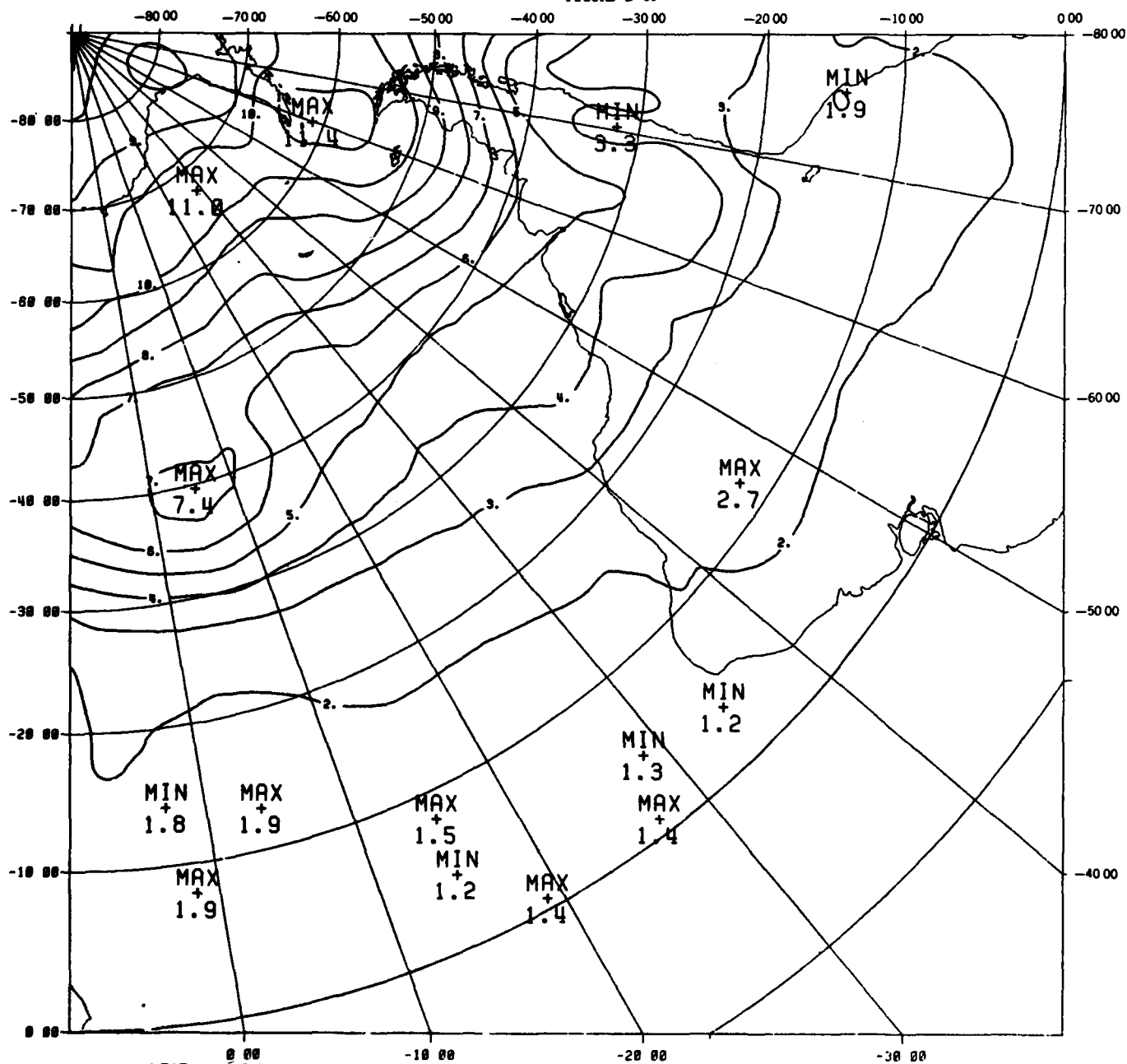
FIGURE B-88



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FOURTH QUADRANT

NOVEMBER
MEAN SEA LEVEL
PRESSURE, MILLIBARS

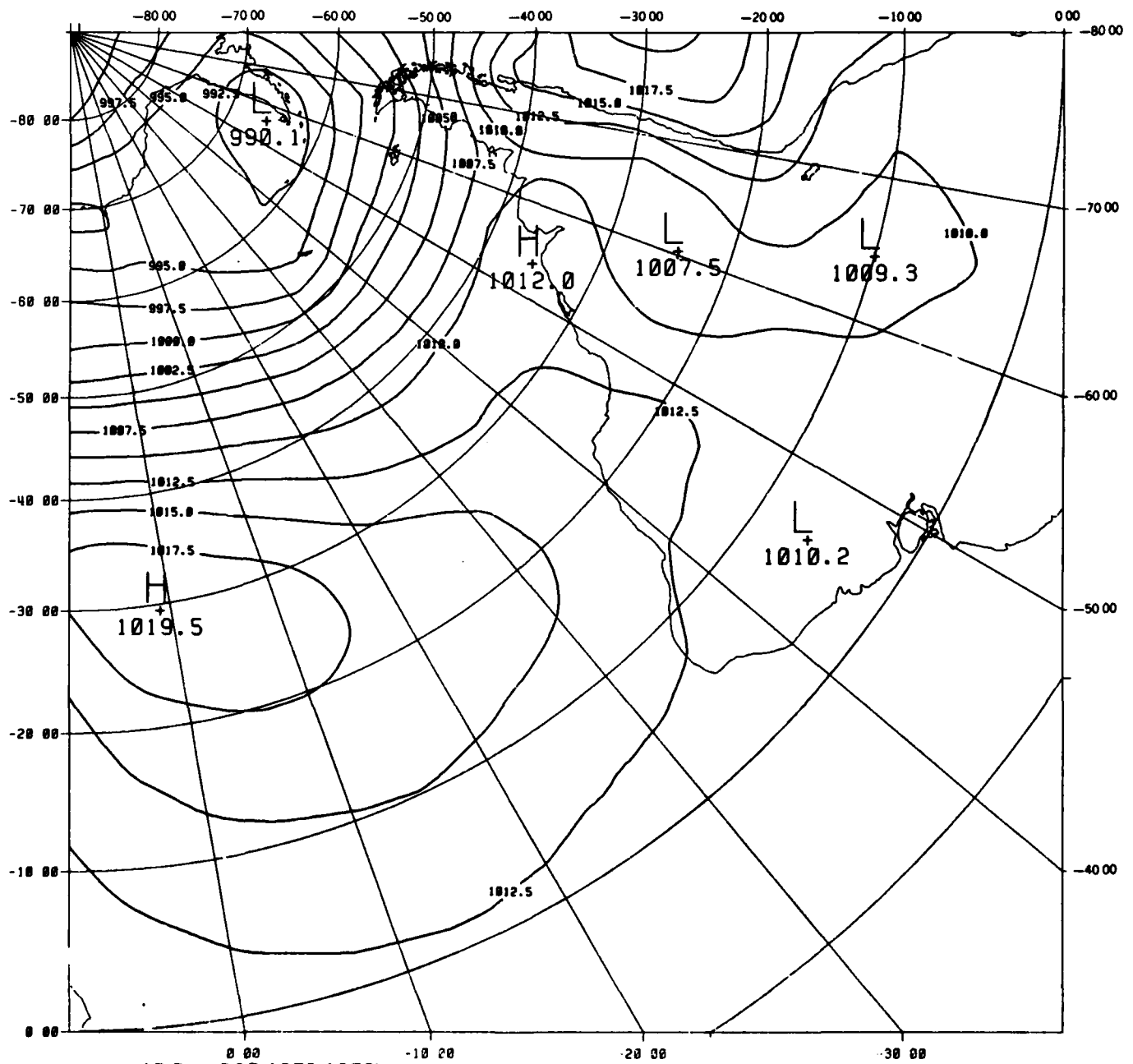
FIGURE B-89



UAPIP (POR 1973-1)
SOUTHERN HEMISPHERE
FIRST QUADRANT

DECEMBER
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

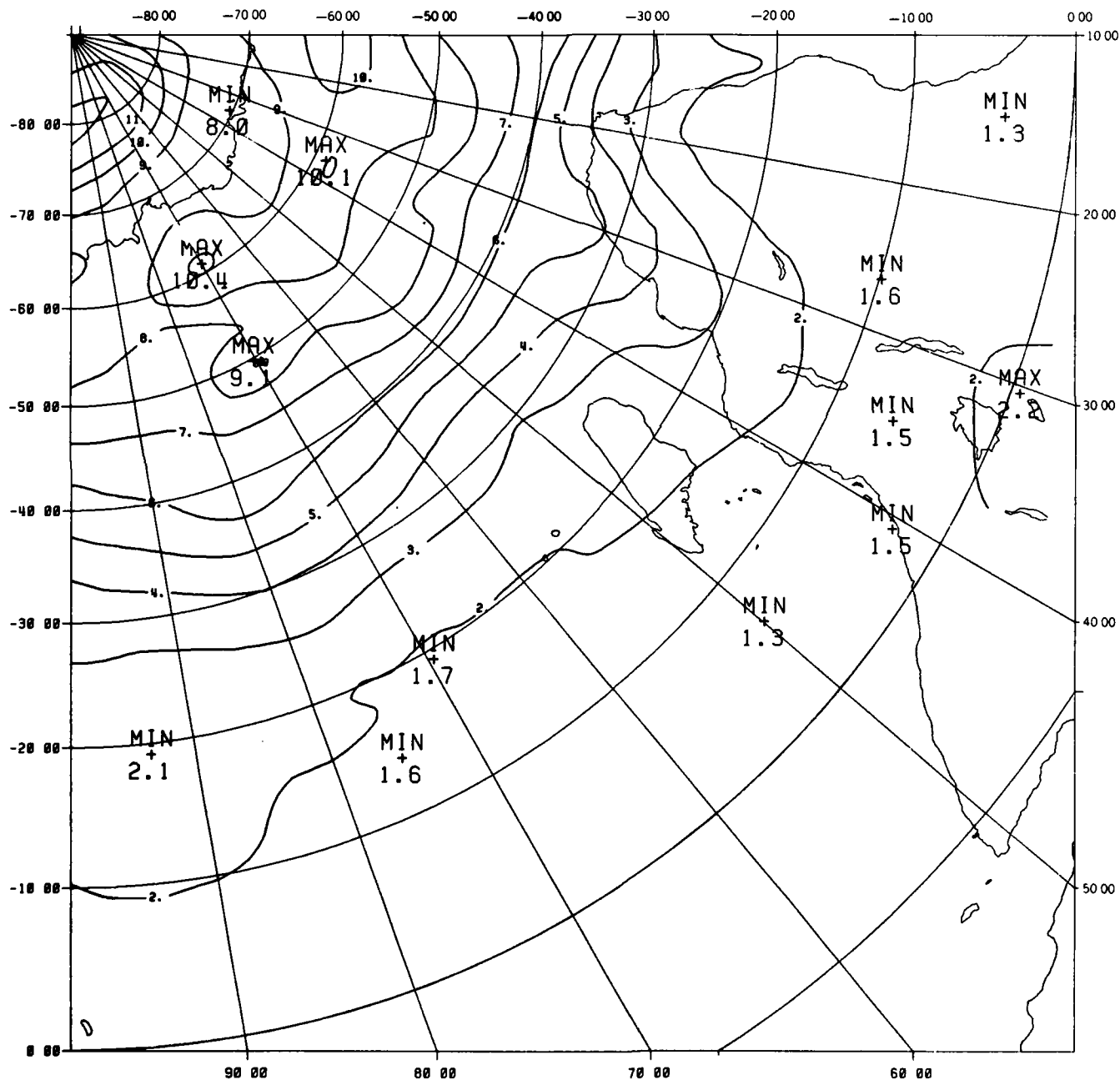
FIGURE B-90



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FIRST QUADRANT

DECEMBER
MEAN SEA LEVEL
PRESSURE, MILLIBARS

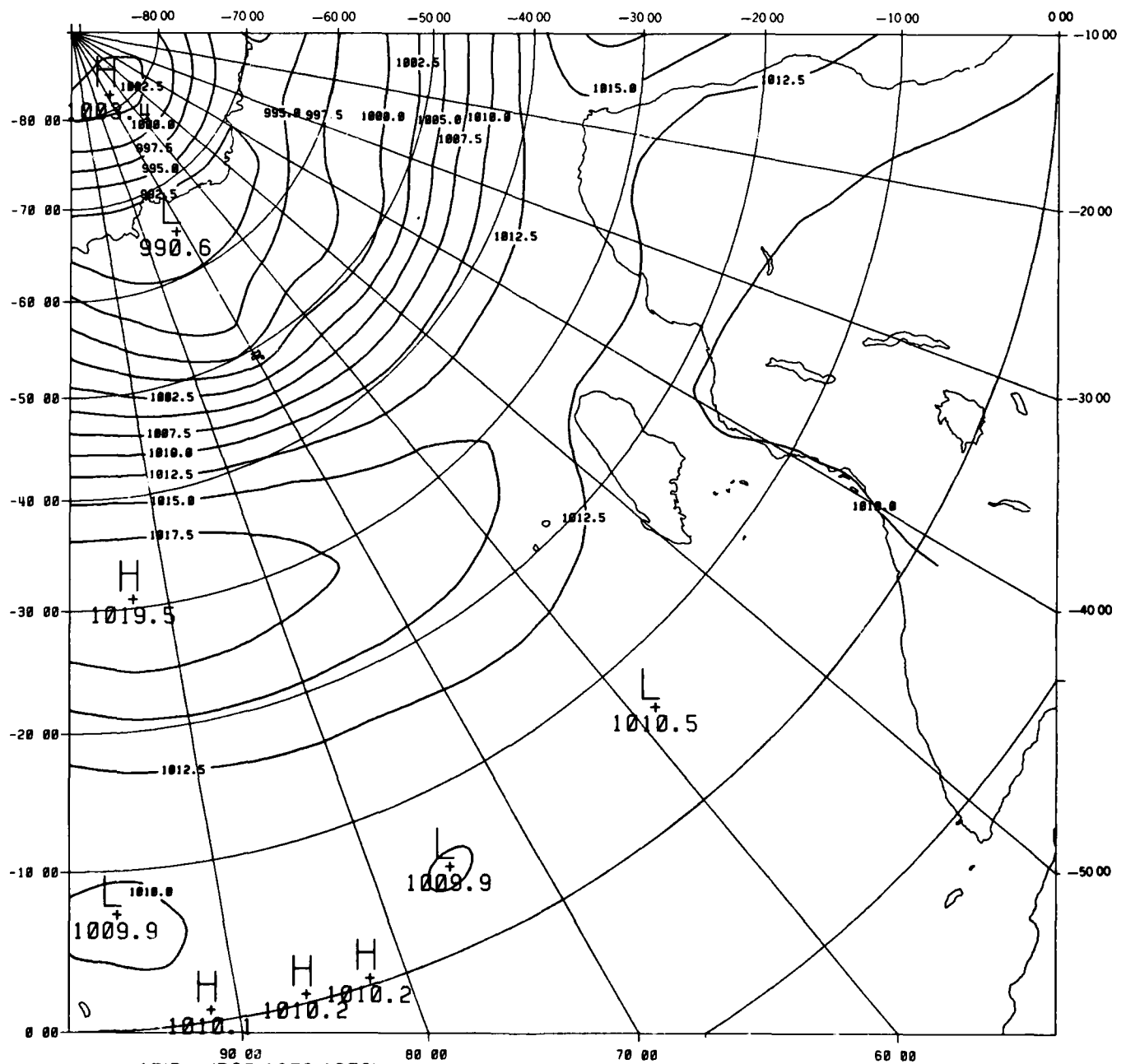
FIGURE B-91



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
SECOND QUADRANT

DECEMBER
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

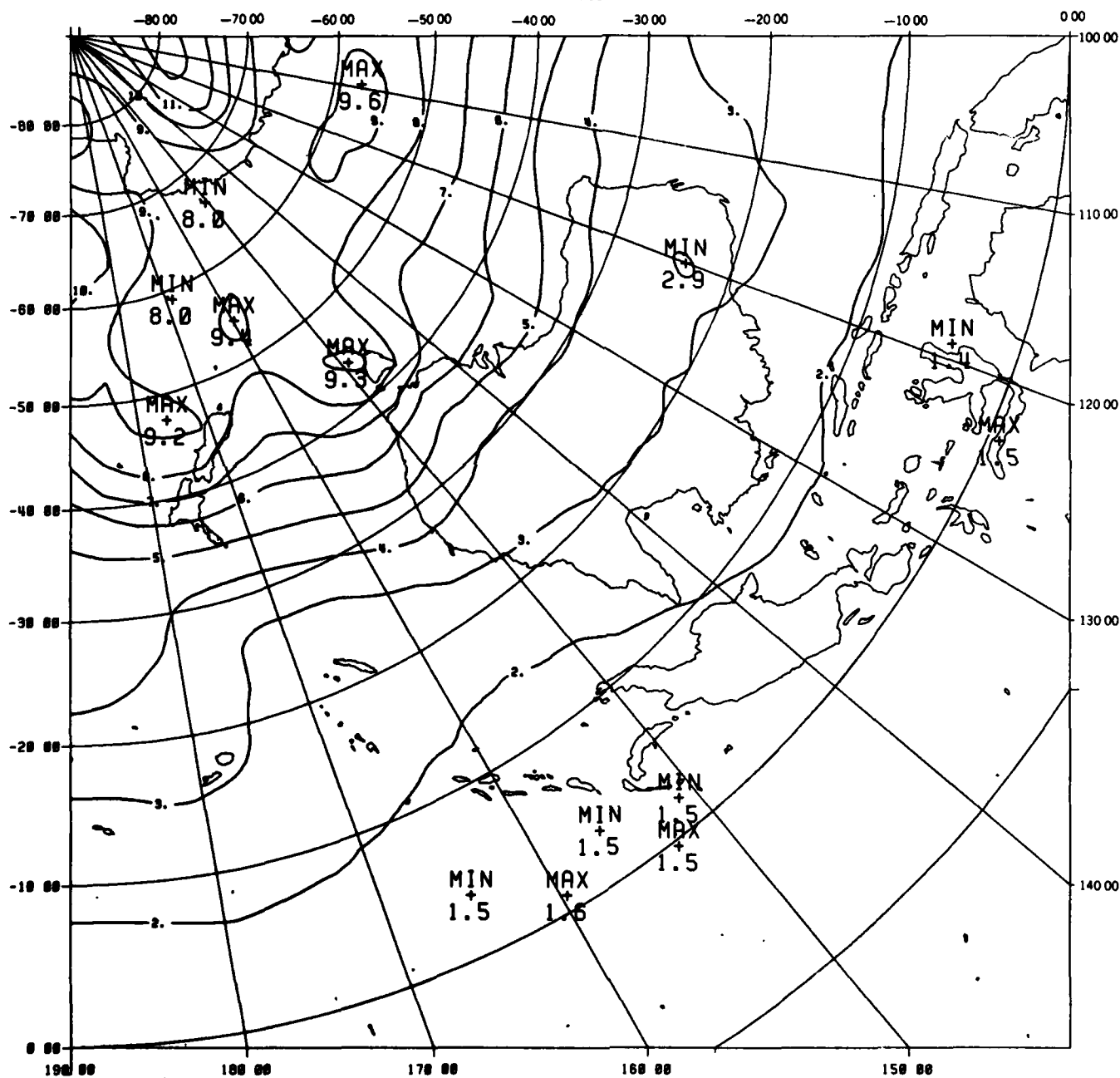
B-93



90 03
UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
SECOND QUADRANT

DECEMBER
MEAN SEA LEVEL
PRESSURE, MILLIBARS

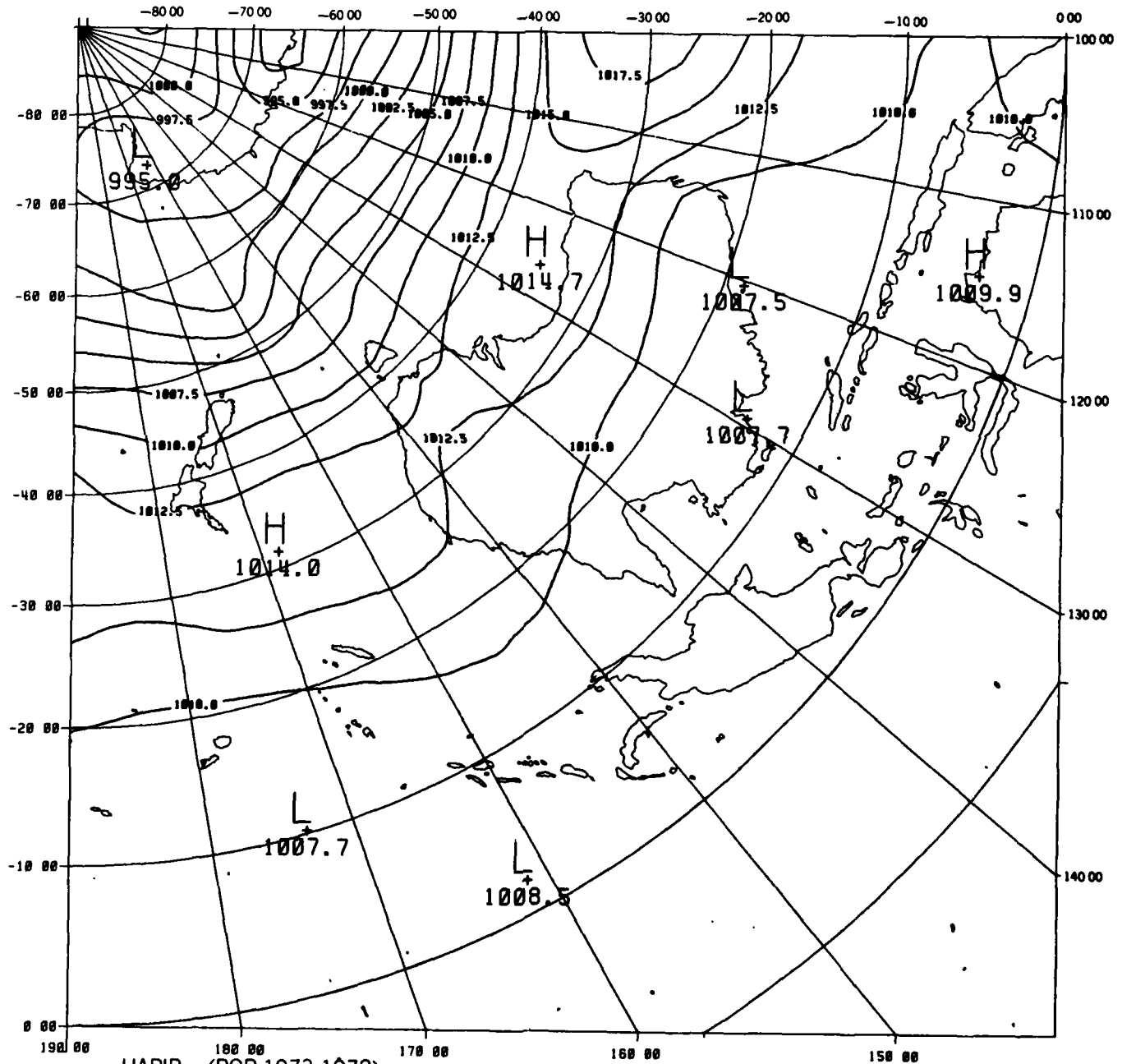
FIGURE B-93



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
THIRD QUADRANT

DECEMBER
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

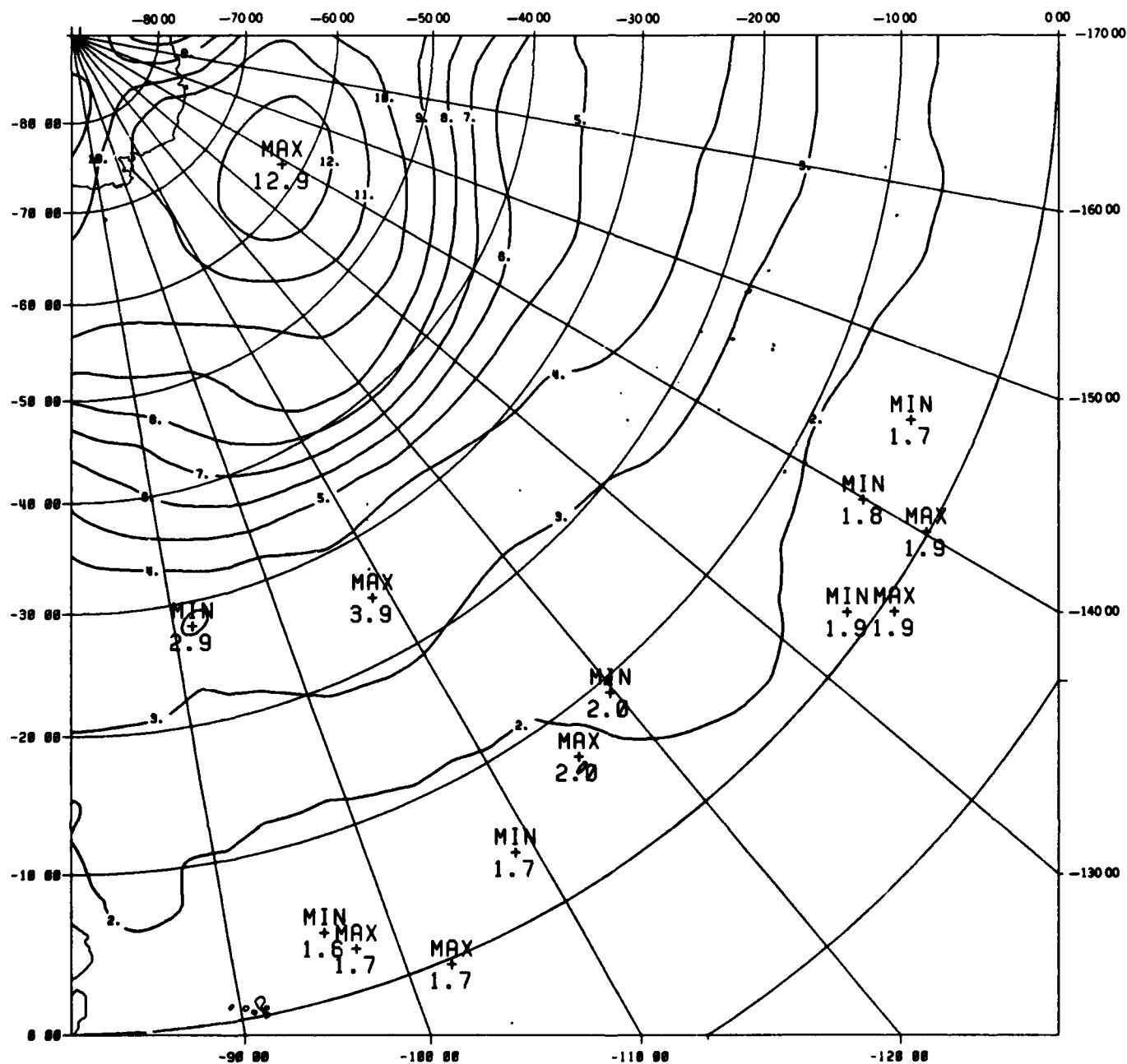
FIGURE B-94



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
THIRD QUADRANT

DECEMBER
MEAN SEA LEVEL
PRESSURE, MILLIBARS

FIGURE B-95



UAPIP (POR 1973-1978)
SOUTHERN HEMISPHERE
FOURTH QUADRANT

DECEMBER
MEAN SEA LEVEL
STDEV OF PRESSURE, MILLIBARS

DECEMBER
MEAN SEA LEVEL
PRESSURE, MILLIBARS

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