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Monthly and Seasonal Mean Analyses

June, July, August 1987

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Monthly and Seasonal Mean Analyses

June, July, August 1987

Mean fields obtained from the archive of operational analyses

Met O 20 (Dynamical Climatology Branch)
Meteorological Office
London Road
Bracknell
Berkshire RG12 2SZ

February 1988

Note: Permission to quote from this document should be obtained from the Assistant Director of the above Meteorological Branch.

Monthly and Seasonal Mean Analyses

Introduction

The archive of operational analyses contains a continuous record of global analyses every 12 hours (00 and 12 GMT) from May 1983 onwards. They are copies of the update analyses produced in the operational numerical weather prediction system using the 15-level model (Bell and Dickinson 1987). In this booklet there are presented monthly and seasonal mean fields computed from the archived analyses for a single season. Since a season spans three calendar months, there are four sections. Sections 1, 2 and 3 contain charts of the monthly mean fields for each month, and section 4 contains charts of the seasonal mean fields. The seasonal means are the means of the fields in the first three sections, weighted according to the number of days in each month.

Each section contains a set of charts for the northern and southern hemispheres and a set for the tropics. In each hemisphere, polar stereographic projects have been used to prepare a chart of pressure at mean sea level and composite charts showing both height (contours) and wind (vectors and isotachs) at 850, 500, 250 and 100 mb. In the tropics the charts are presented on a latitude—longitude projection encircling the globe in three sections covering the longitudes 0°—120°E, 120°E—120°W and 120°W—0°. This projection has been used to produce a series of charts of wind vectors and isotachs at 850 and 250 mb. On all charts, contours are depicted as solid lines, wind vectors as arrows and isotachs as dashed lines.

When archiving was first undertaken, for May 1983, global fields were stored according to their coefficients in a series of spherical harmonics up to a triangular truncation of T40 (Swinbank 1984). Since this is roughly equivalent to a latitude–longitude grid with a resolution of 4.5° by 4.5°, the conversion from the model's standard grid of 1.5° by 1.875° to the spectral representation results in some smoothing of the fields. Subsequently, a new method for storing the archived fields was developed as a result of discussions within the Working Group on the Development of the Operational Suite (WGDOS). This method uses a compressed digital coding of the original model field, on its standard latitude–longitude grid, but with fewer significant figures (Lowther 1986). It was implemented on 18 December 1985 in a limited version. After the inclusion of more fields, and following monitoring to ensure that the two representations (i.e. truncated spectral and compressed grid-point) of the archived analyses were consistent, the spectral archive was terminated on 31 October 1986.

The contents of the archives may be examined by consulting the computer data set 'M20.NARCHIND', where the tape number, file number and data set name for each archived day may be found. The fields in the spectral archive are stored in the format required by the post-processing (p-p) package. Details of the format and of the subroutines to be used for accessing the data are described in the manual for the p-p package. Some examples are shown in Swinbank (1984). The fields in the daily grid-point archive are stored as printfiles (Lowther 1986). A list of the fields in each of the two versions of the daily archive is given in the relevant documentation.

The monthly and seasonal mean fields have been computed from the spectral archive up to the end of October 1986. Thereafter, they have been computed from the grid-point archive. The mean fields are held as computer data sets in Met O 20, in spectral or grid-point format, as appropriate, and are available for general use. Means for each month and season over three years of the spectral archive are also available. The mean fields that are held are as follows:

Field		Pressure level (mb)
Westerly wind component	(m/s)	
Southerly wind component	(m/s)	1000*, 850, 700, 500, 400, 300,
Height	(dam)	250, 200, 150, 100, 70, 50
Temperature	(K)	
Relative humidity	(%)	1000*, 850, 700, 500, 400, 300
Pressure at mean sea level	(mb)	

* Fields at 1000 mb are held in the spectral archive. In the grid-point archive this level has been omitted and fields at 950 mb are held instead.

References

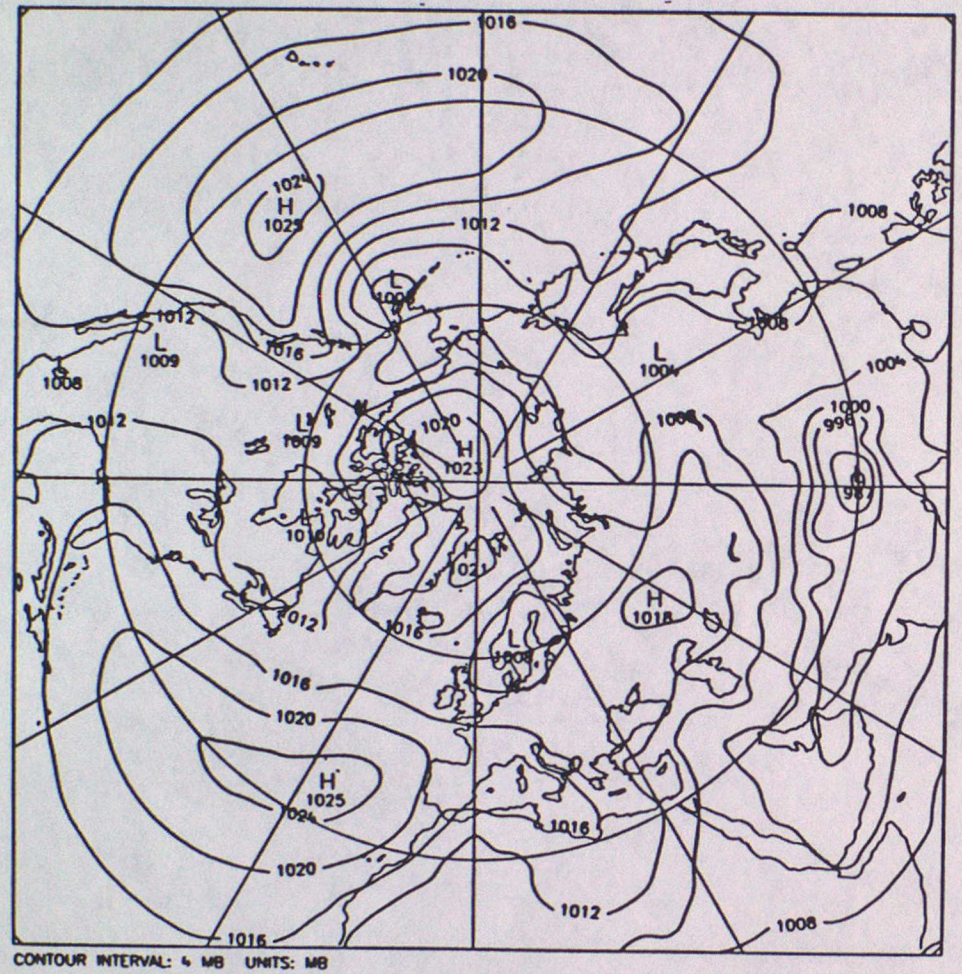
Bell, R.S. and Dickinson, A. 1987 The Meteorological Office operational numerical weather prediction system, Meteorological Office Scientific Paper No. 41, Met.O.979, HMSO.

Lowther, D. 1986 WGDOS Printfile Archive, Operational NWP Scheme, Documentation Paper No. 9.1, Met O 2b, Meteorological Office, Bracknell.

Swinbank, R. 1984 A system to archive operational analyses for research purposes. Met O 20 Technical Note No. II/218. Meteorological Office, Bracknell.

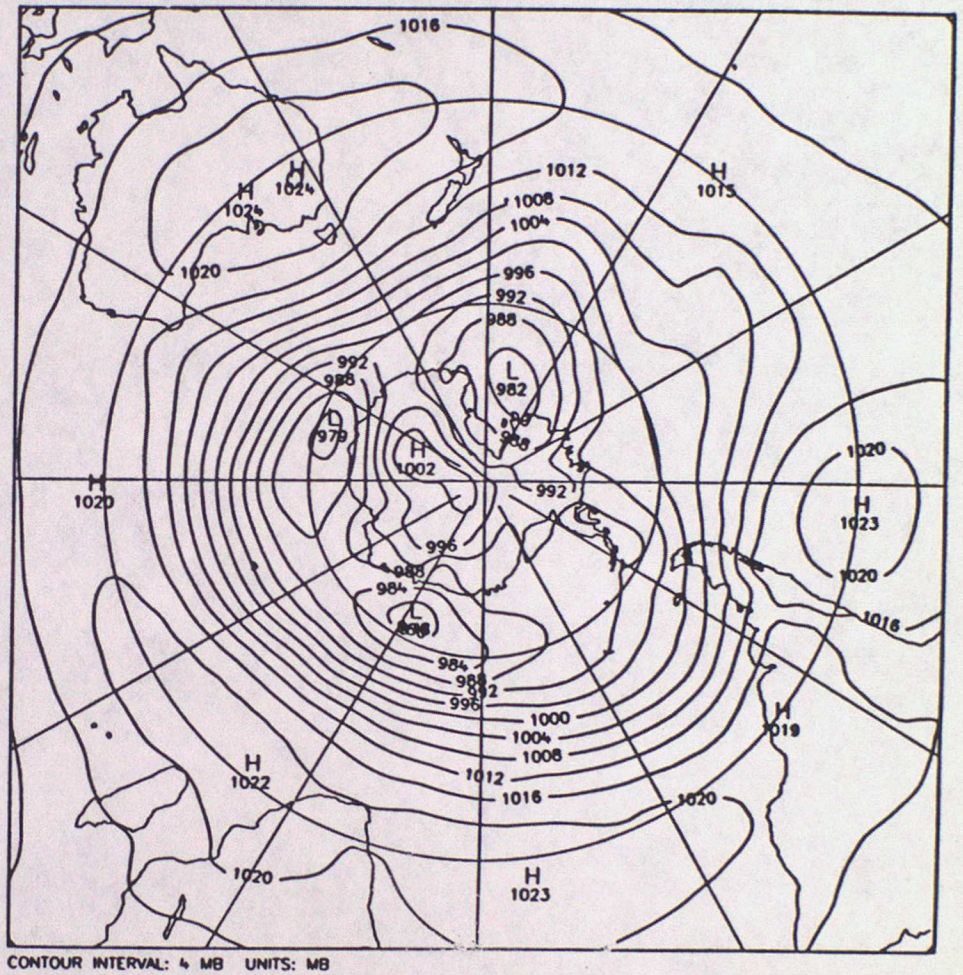
JUNE
1987

OPERATIONAL ARCHIVE MEANS. JUNE 1987
PMSL
VALID AT 0Z ON 1/6/1987 DAY 152 DATA TIME 12Z ON 30/6/1987 DAY 181
SEA LEVEL



CONTOUR INTERVAL: 4 MB UNITS: MB

OPERATIONAL ARCHIVE MEANS. JUNE 1987
PMSL
VALID AT 0Z ON 1/6/1987 DAY 152 DATA TIME 12Z ON 30/6/1987 DAY 181
SEA LEVEL



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HEIGHTS, WIND ARROWS AND ISOTACHS.
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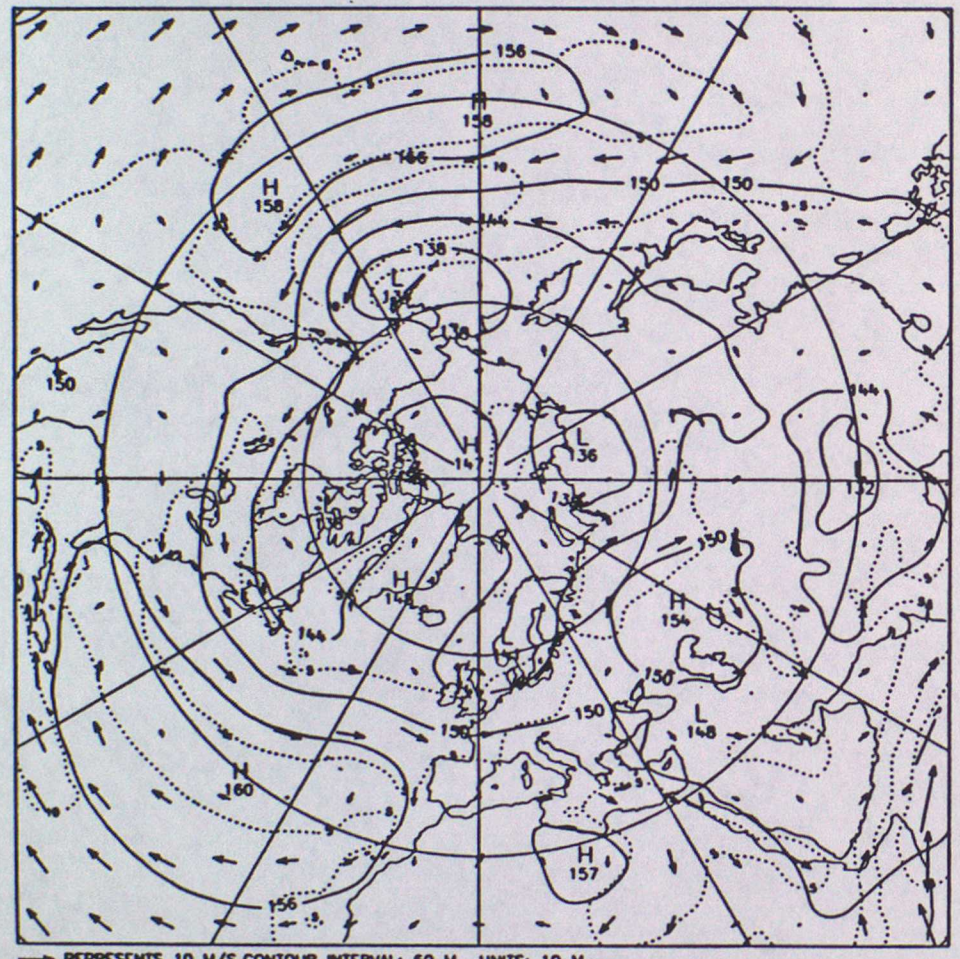

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HEIGHTS, WIND ARROWS AND ISOTACHS.
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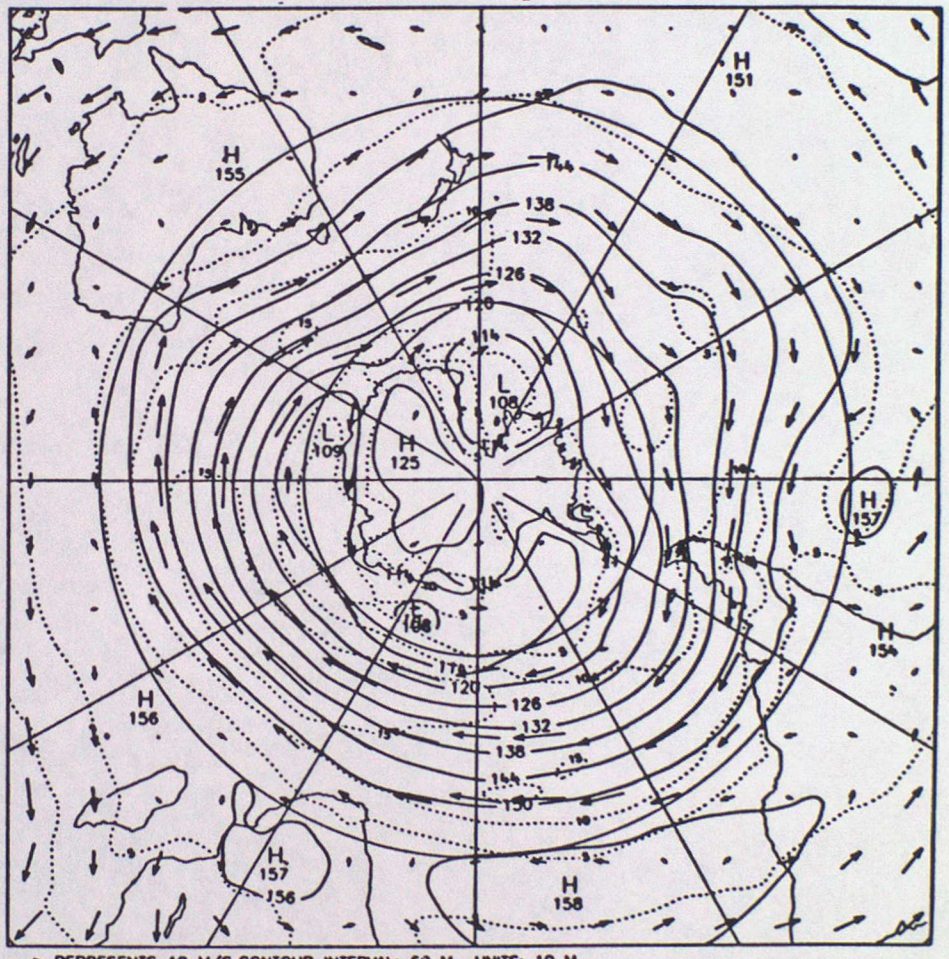

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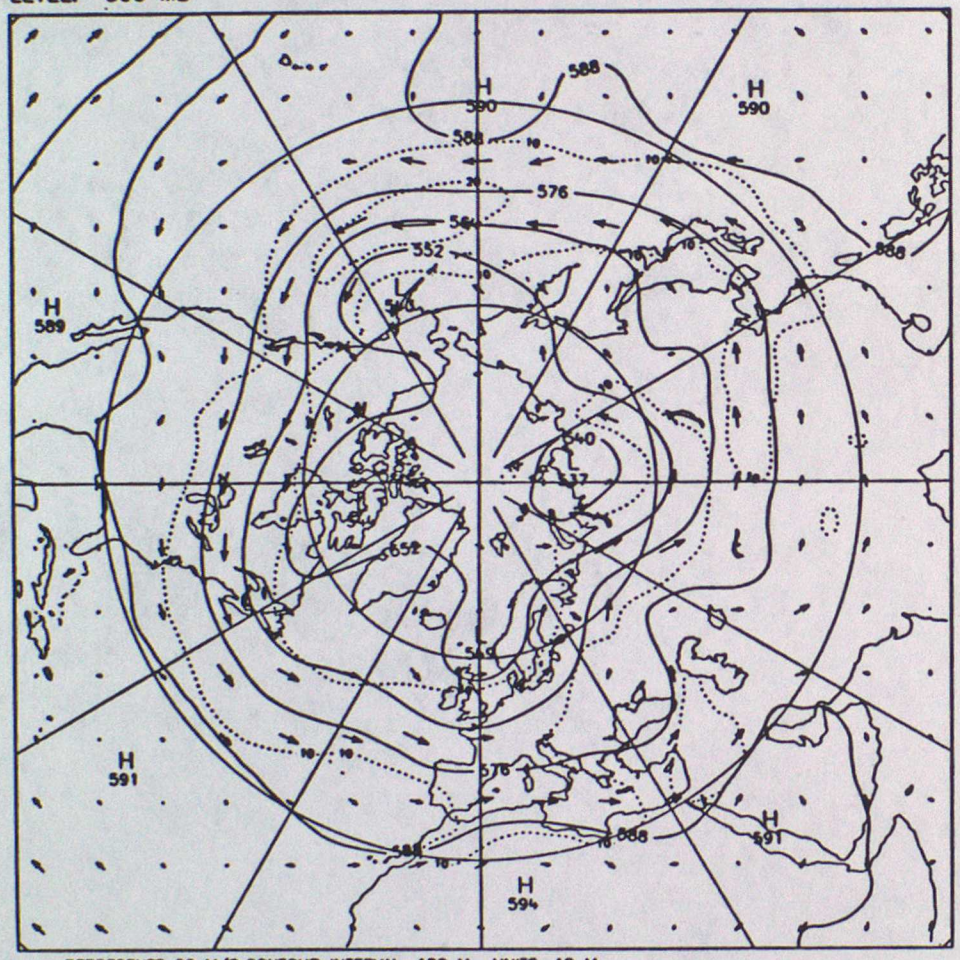

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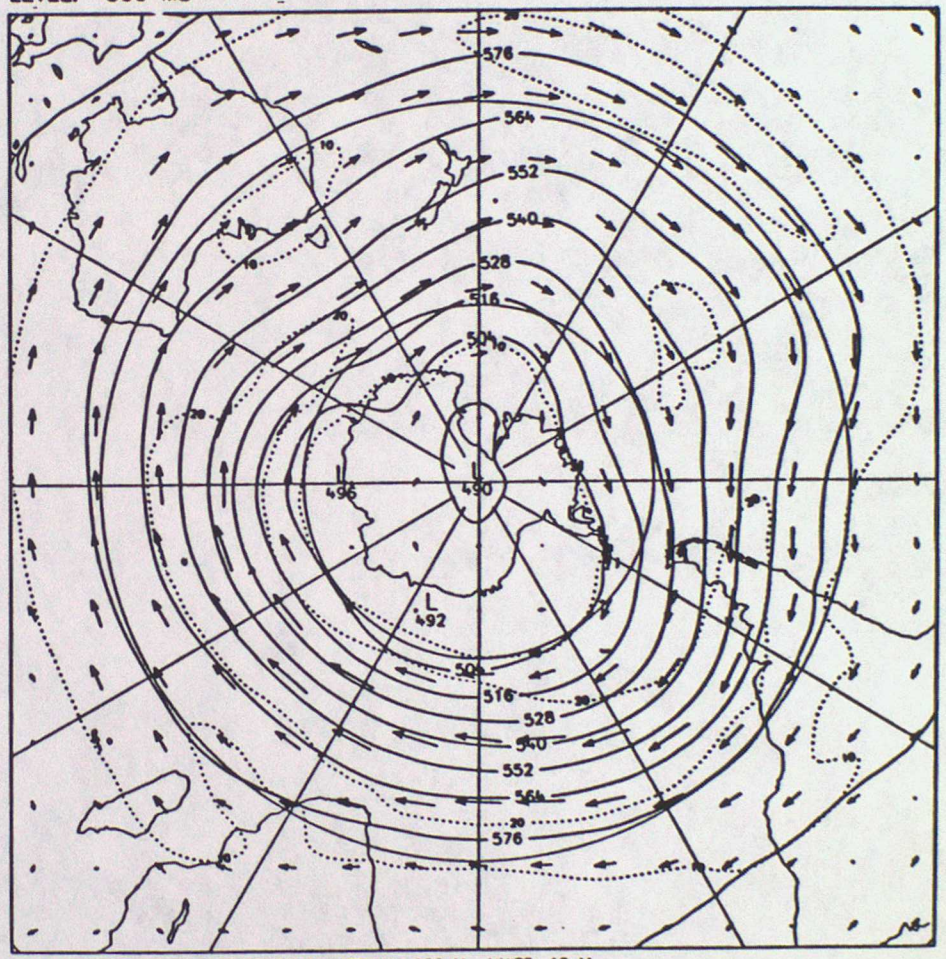

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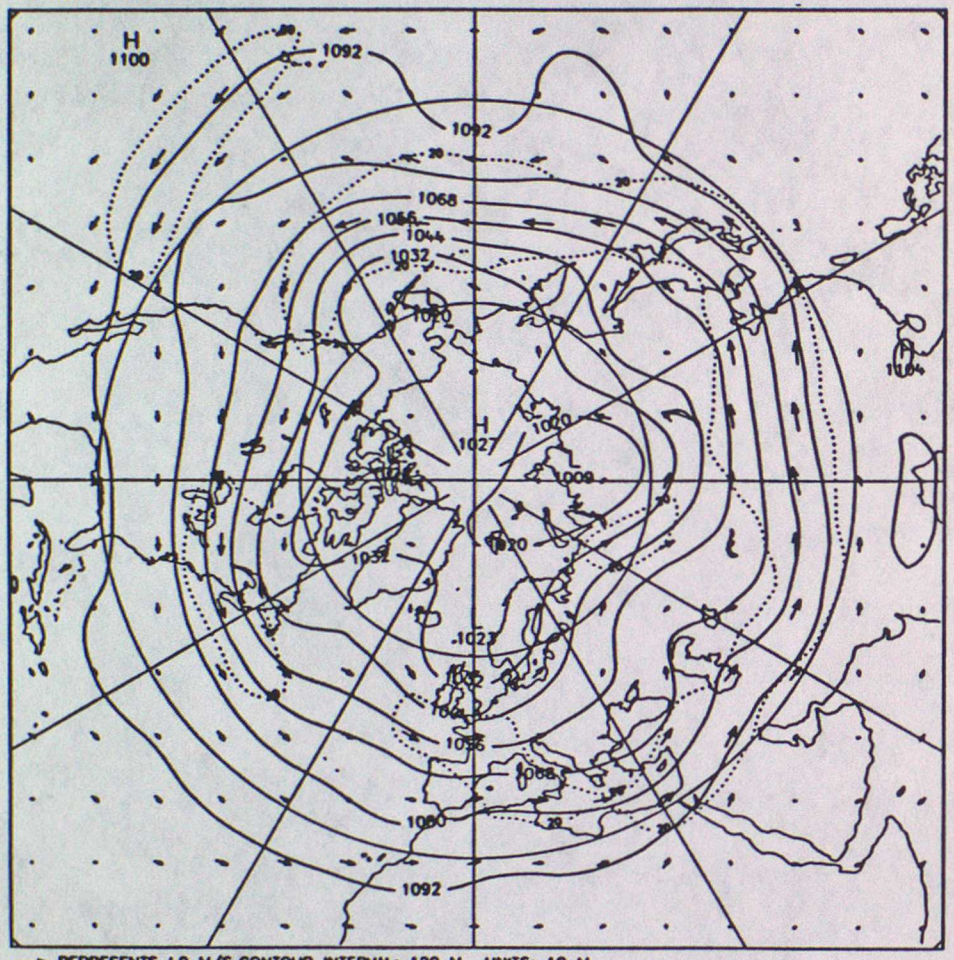

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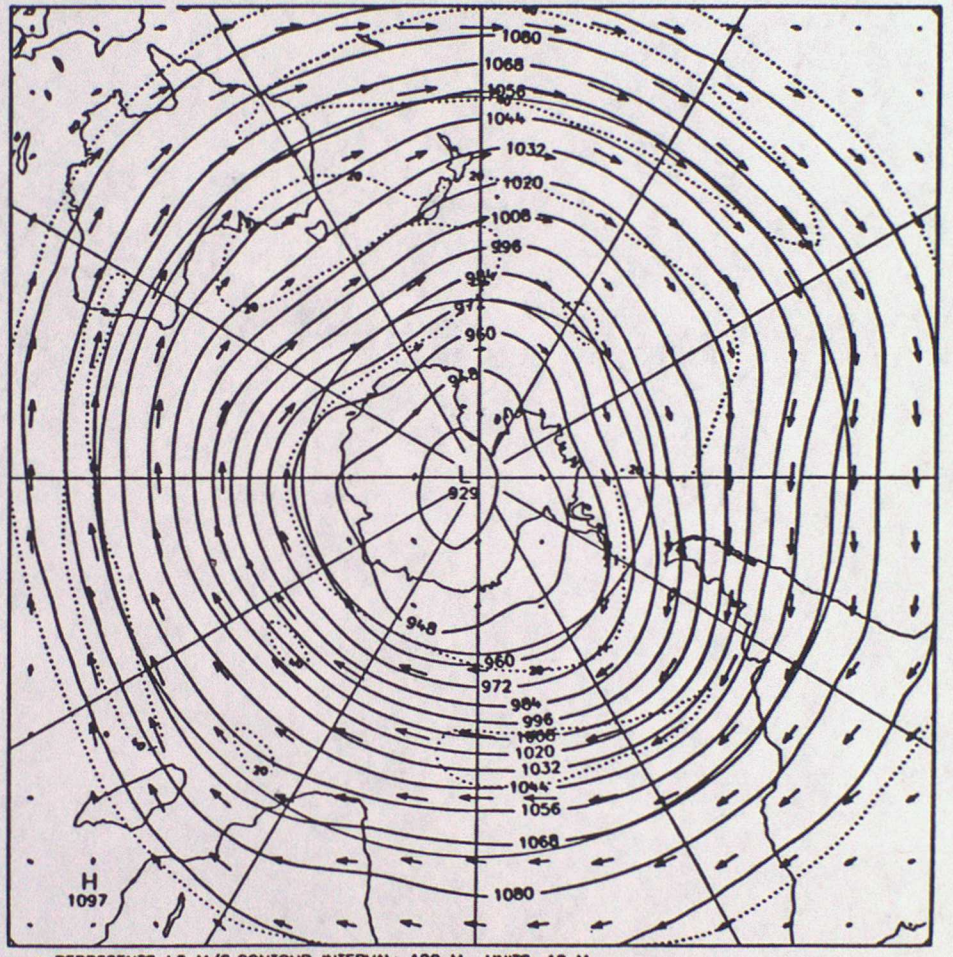

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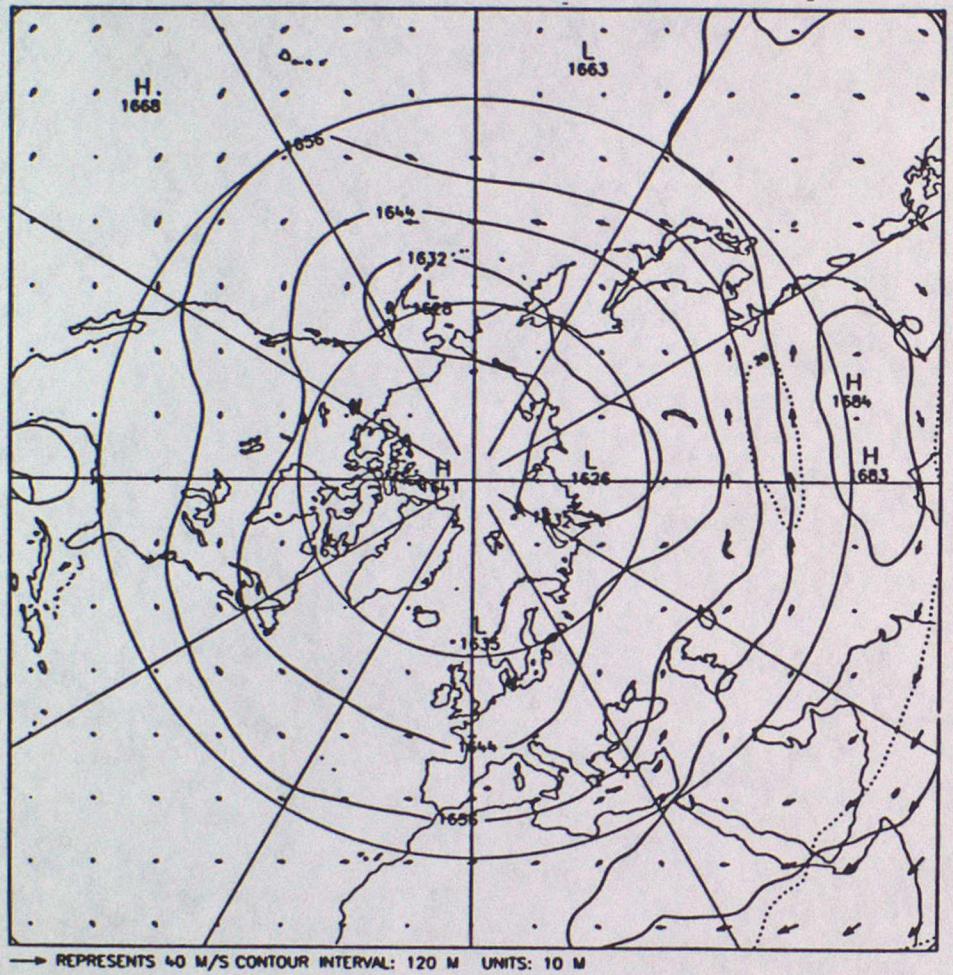

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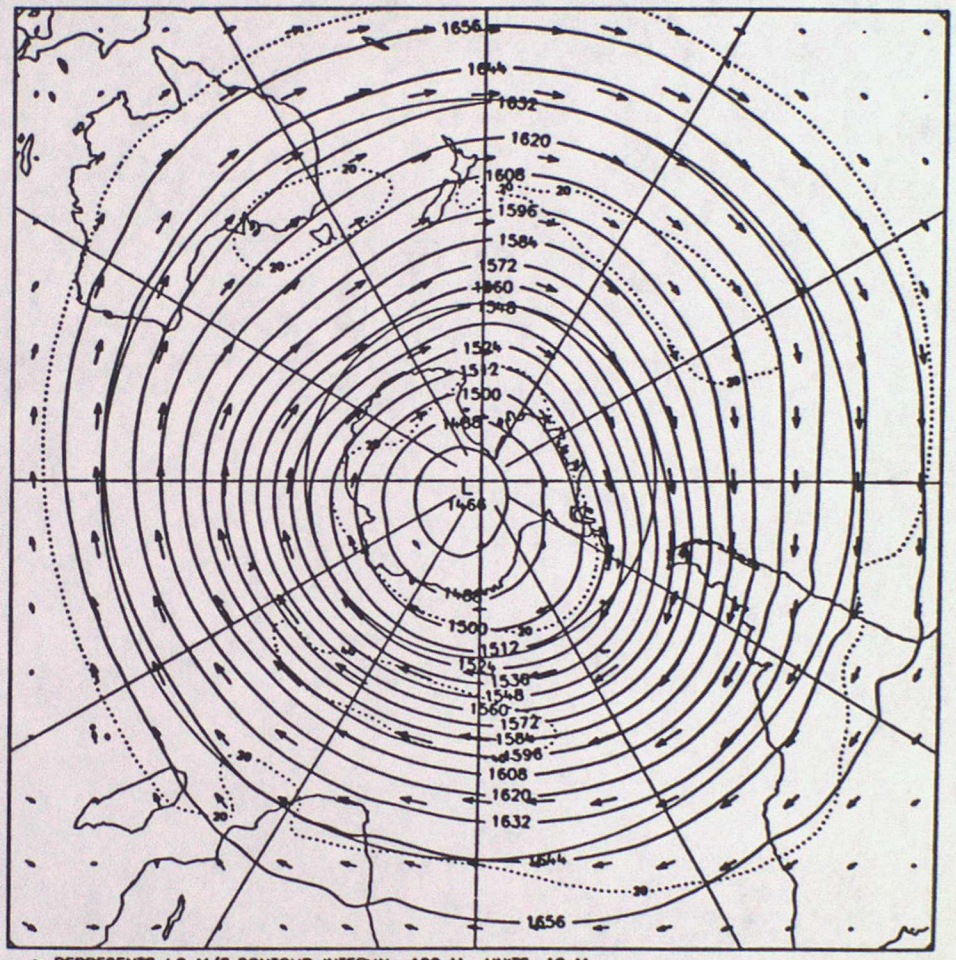

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WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
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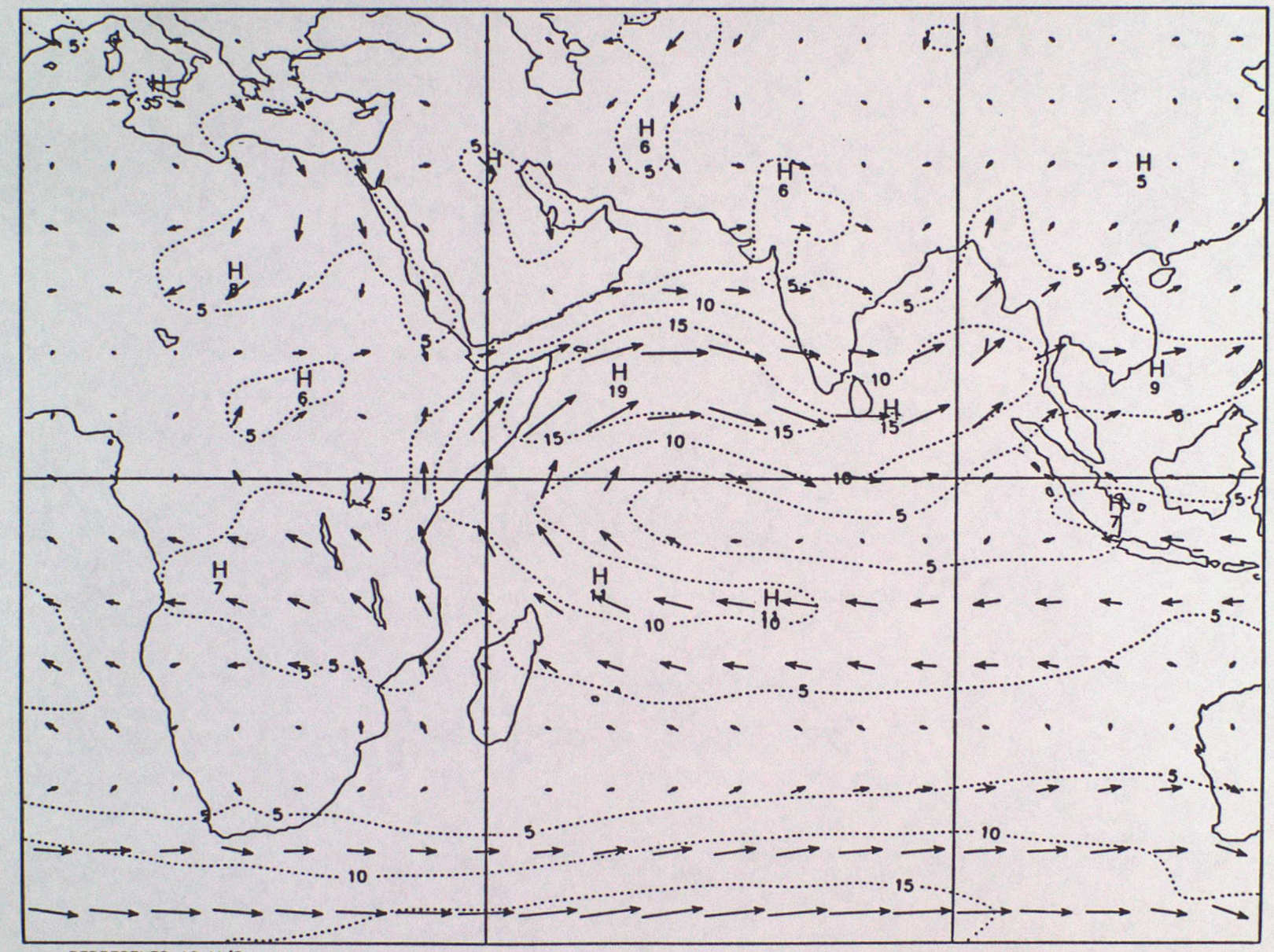
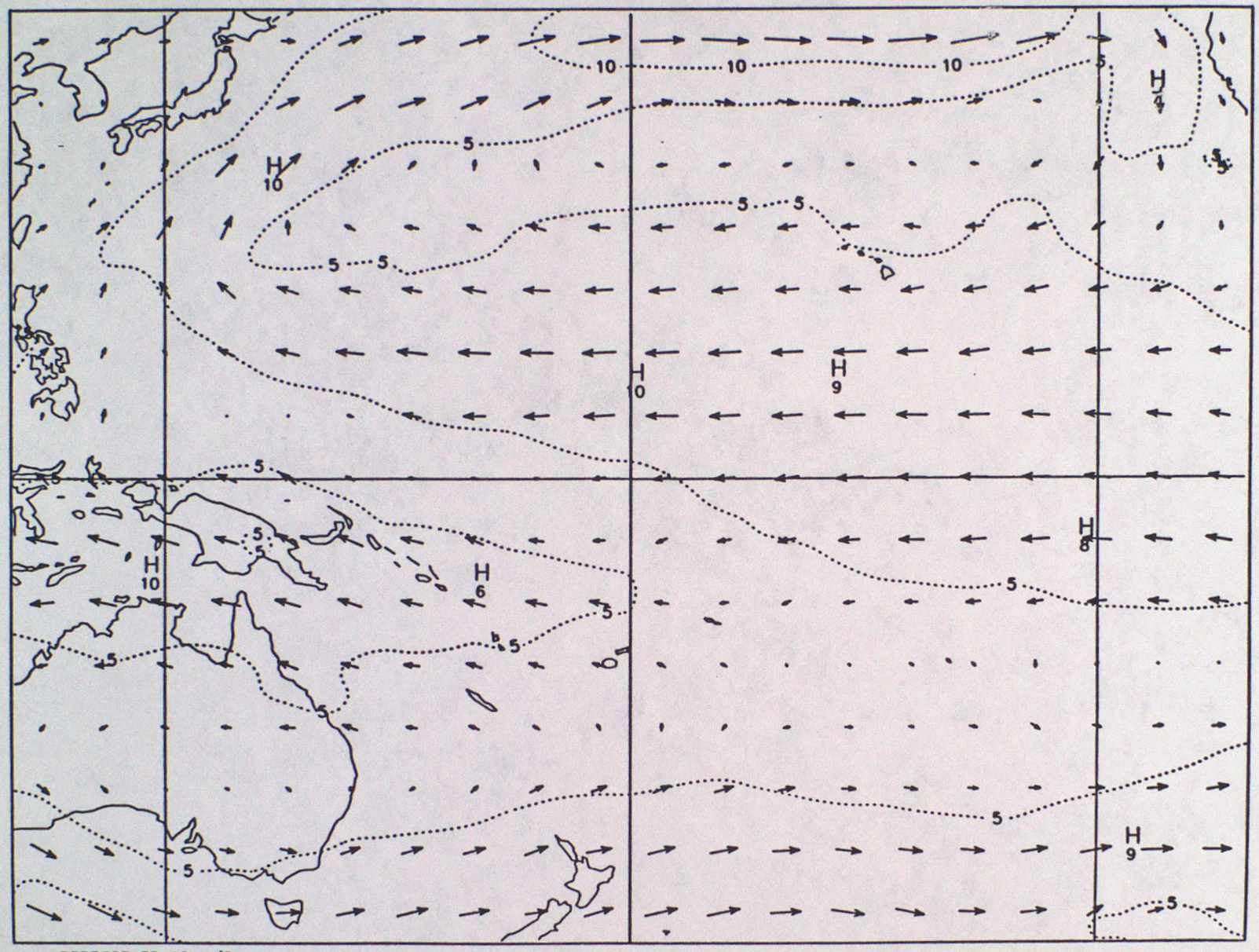
850 MBS. BETWEEN LONGS. 0 E - 120 E



OPERATIONAL ARCHIVE MEANS. JUNE 1987
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
VALID AT 0Z ON 1/6/1987 DAY 152 DATA TIME 12Z ON 30/6/1987 DAY 181
850 MBS. BETWEEN LONGS. 120 E - 120 W



OPERATIONAL ARCHIVE MEANS. JUNE 1987
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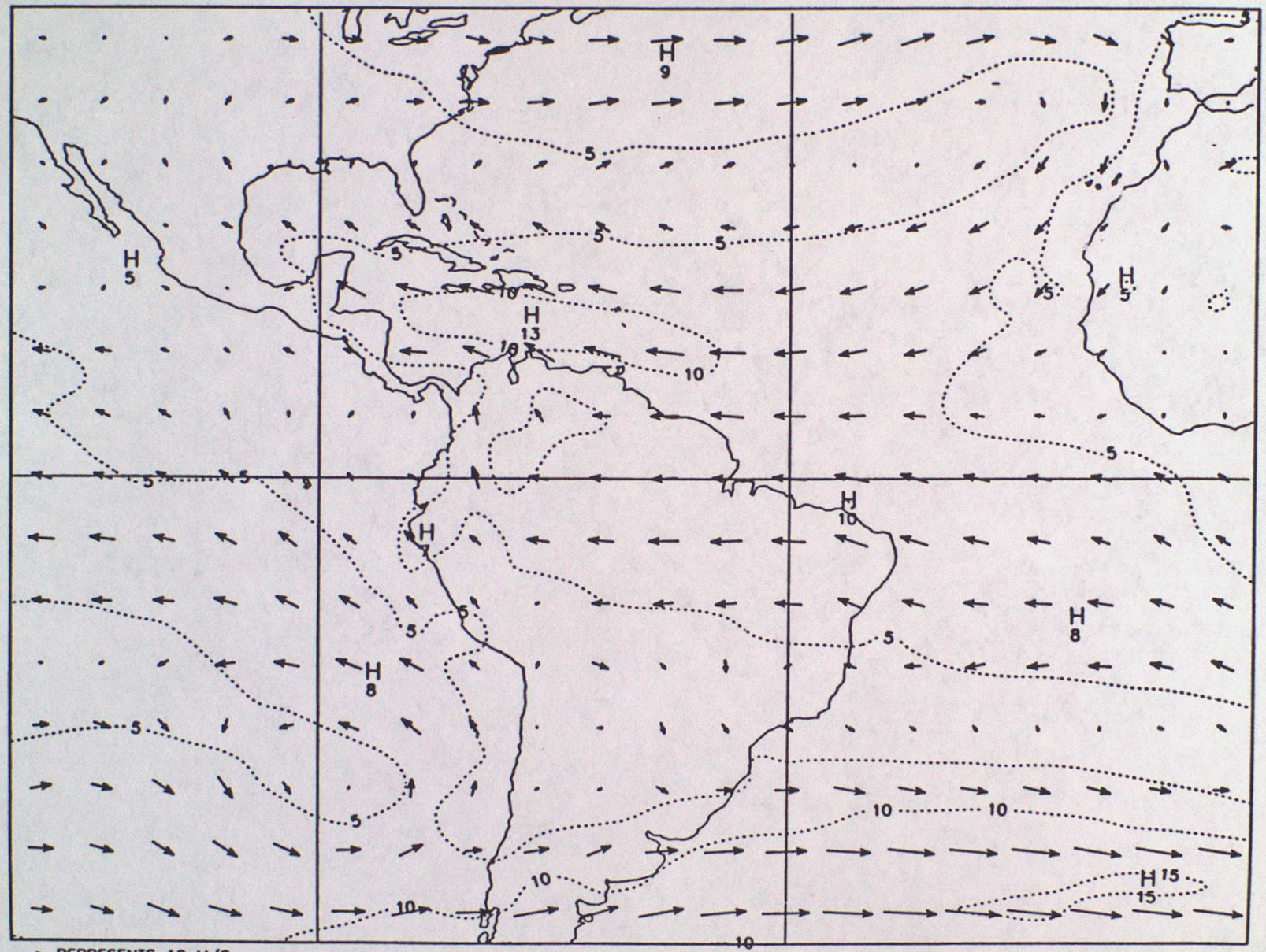
VALID AT 0Z ON 1/6/1987 DAY 152 DATA TIME 12Z ON 30/6/1987 DAY 181
850 MBS. BETWEEN LONGS. 120 W - 0 W



→ REPRESENTS 10 M/S

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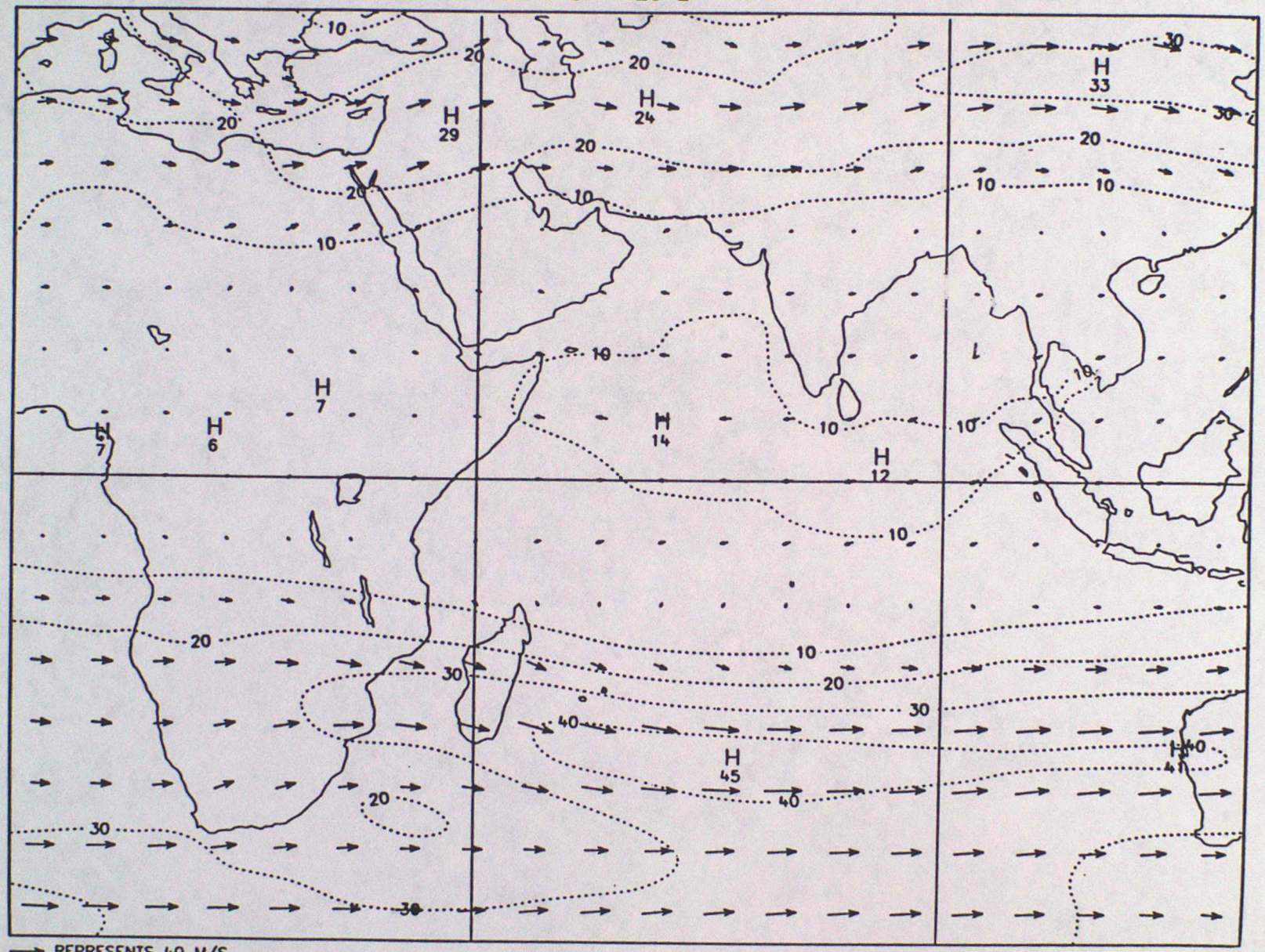

→ REPRESENTS 40 M/S

OPERATIONAL ARCHIVE MEANS. JUNE 1987
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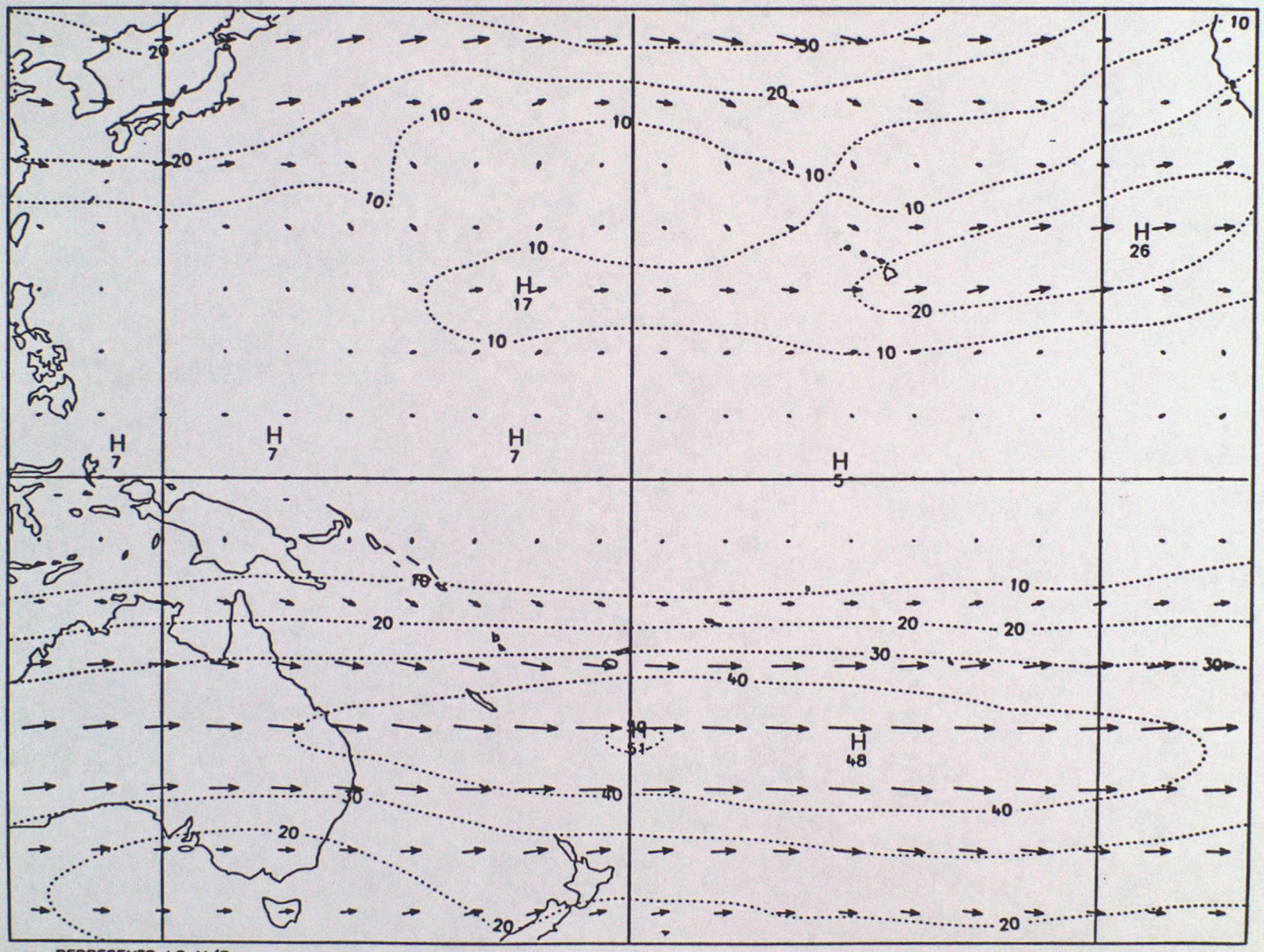
250 MBS. BETWEEN LONGS. 120 E - 120 W



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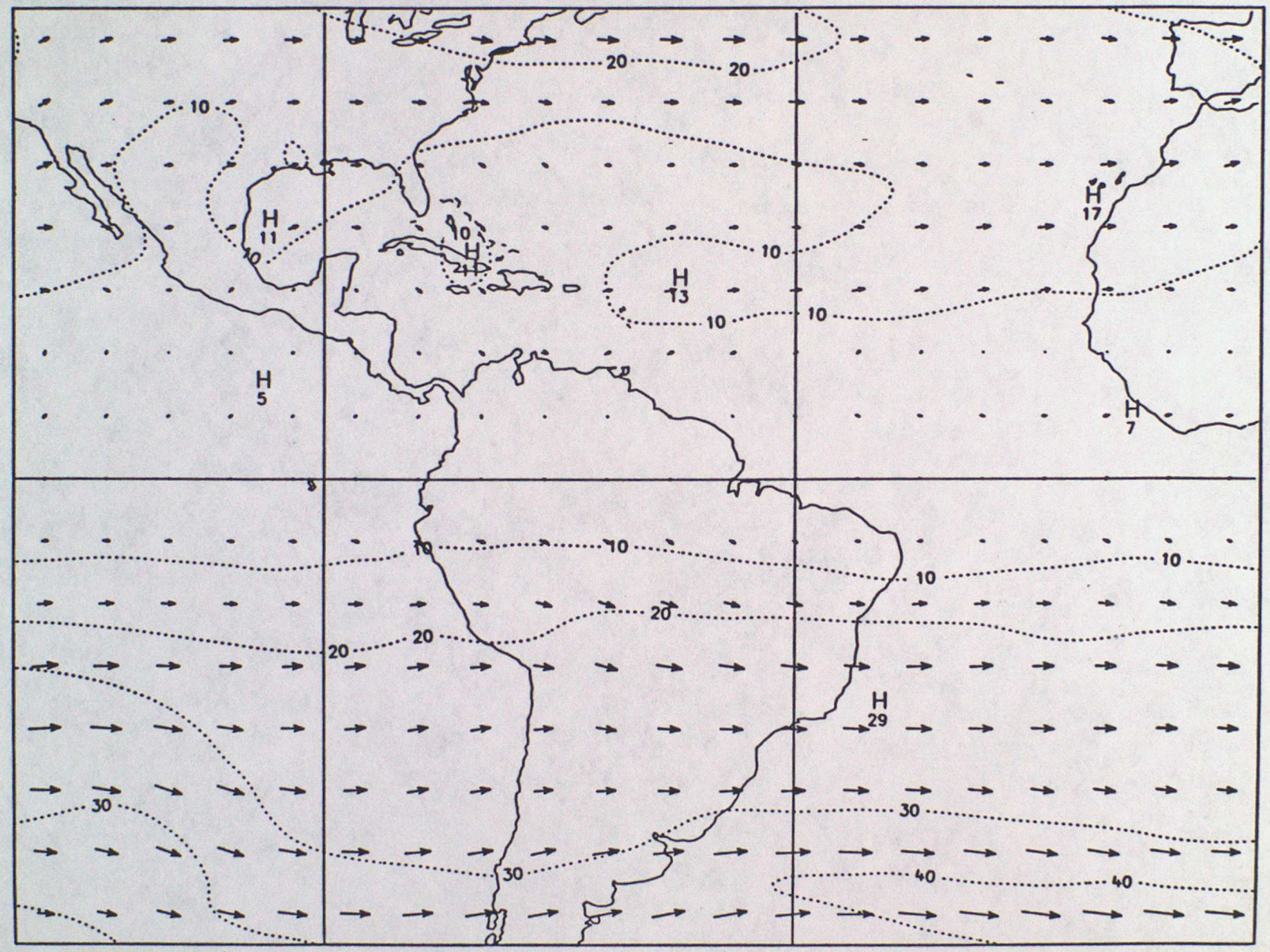
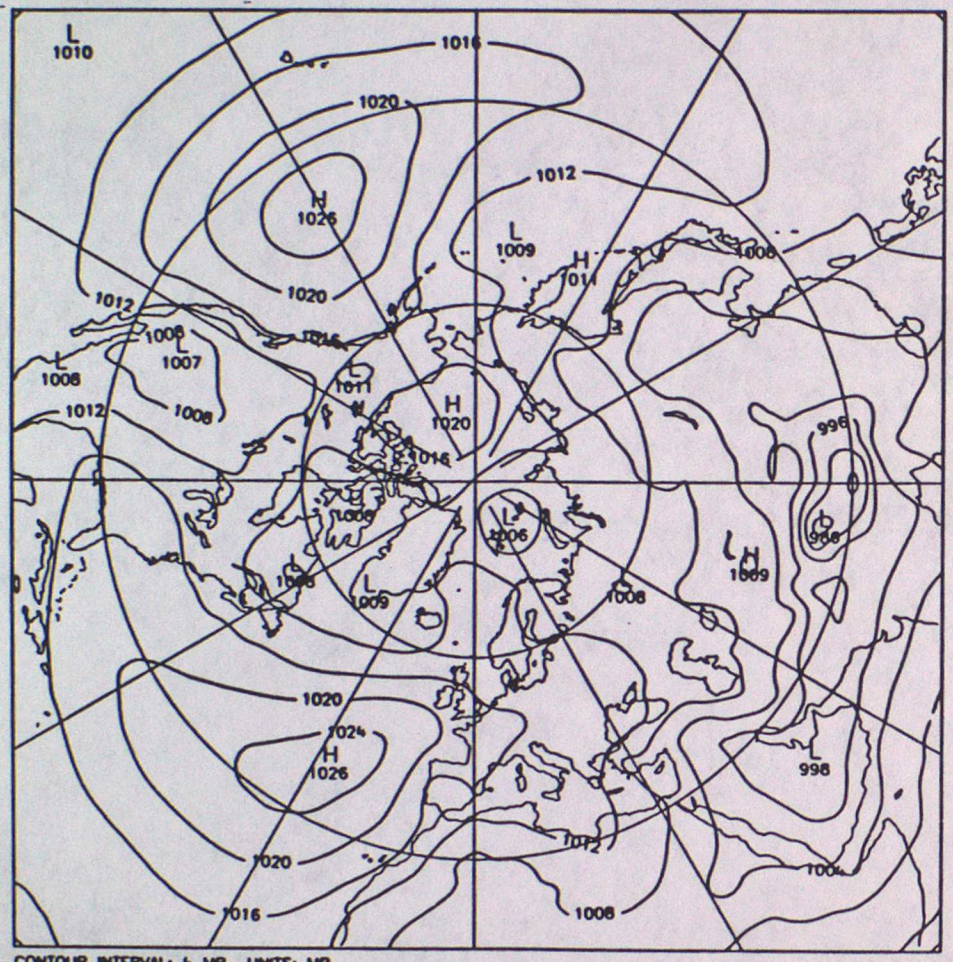


→ REPRESENTS 40 M/S

JULY
1987

OPERATIONAL ARCHIVE MEANS. JULY 1987
PMSL
VALID AT 0Z ON 1/7/1987 DAY 182 DATA TIME 12Z ON 31/7/1987 DAY 212
SEA LEVEL



CONTOUR INTERVAL: 4 MB UNITS: MB

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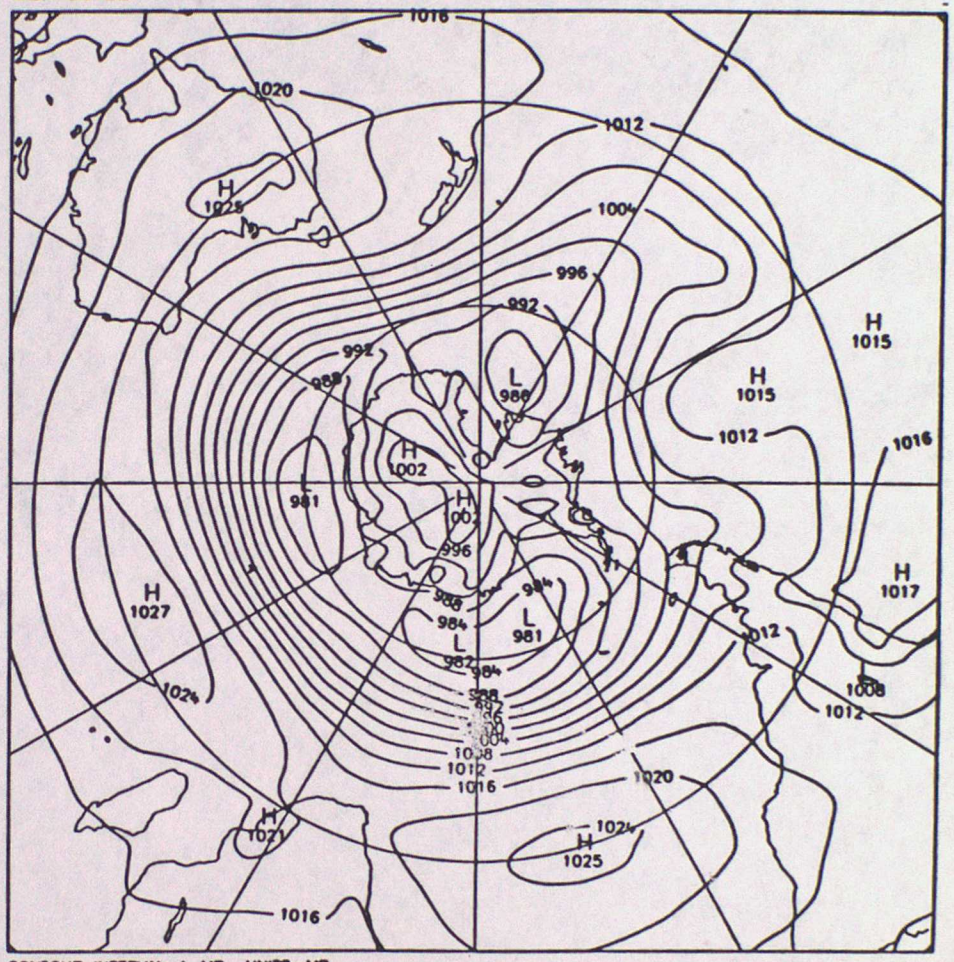
SEA LEVEL



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OPERATIONAL ARCHIVE MEANS. JULY 1987
HEIGHTS, WIND ARROWS AND ISOTACHS.
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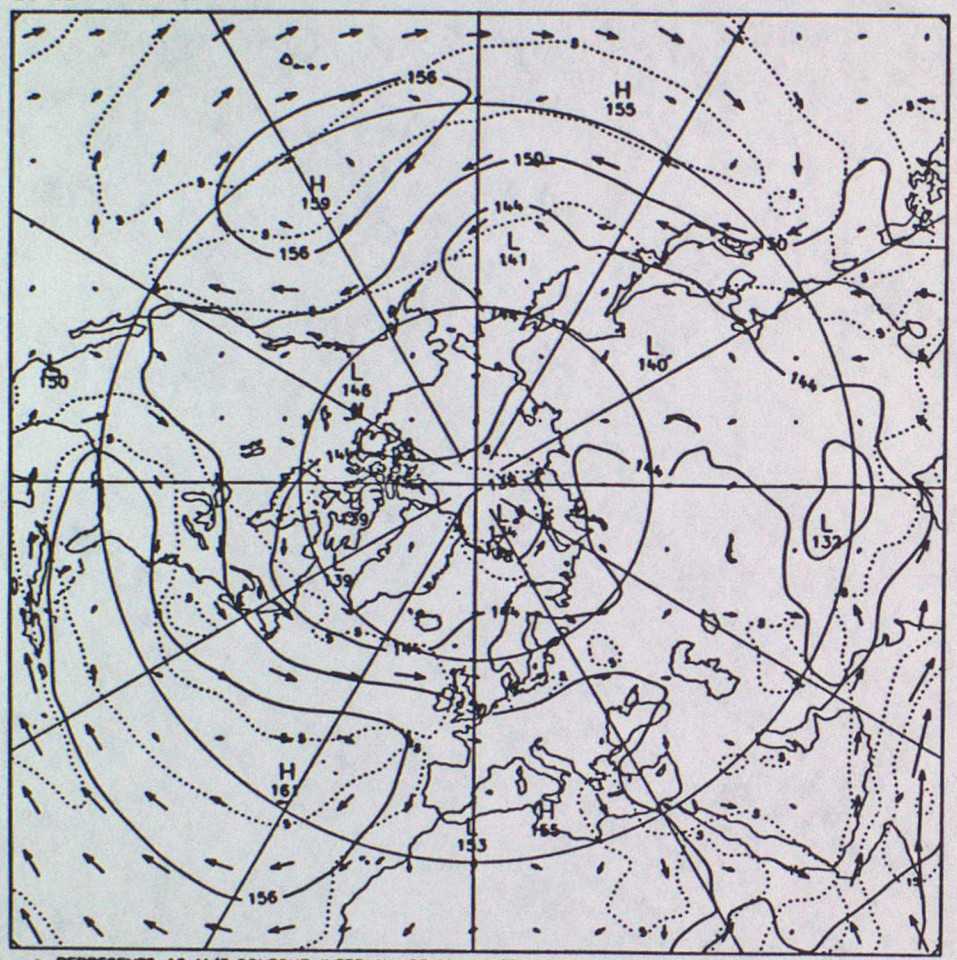

→ REPRESENTS 10 M/S CONTOUR INTERVAL: 60 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. JULY 1987
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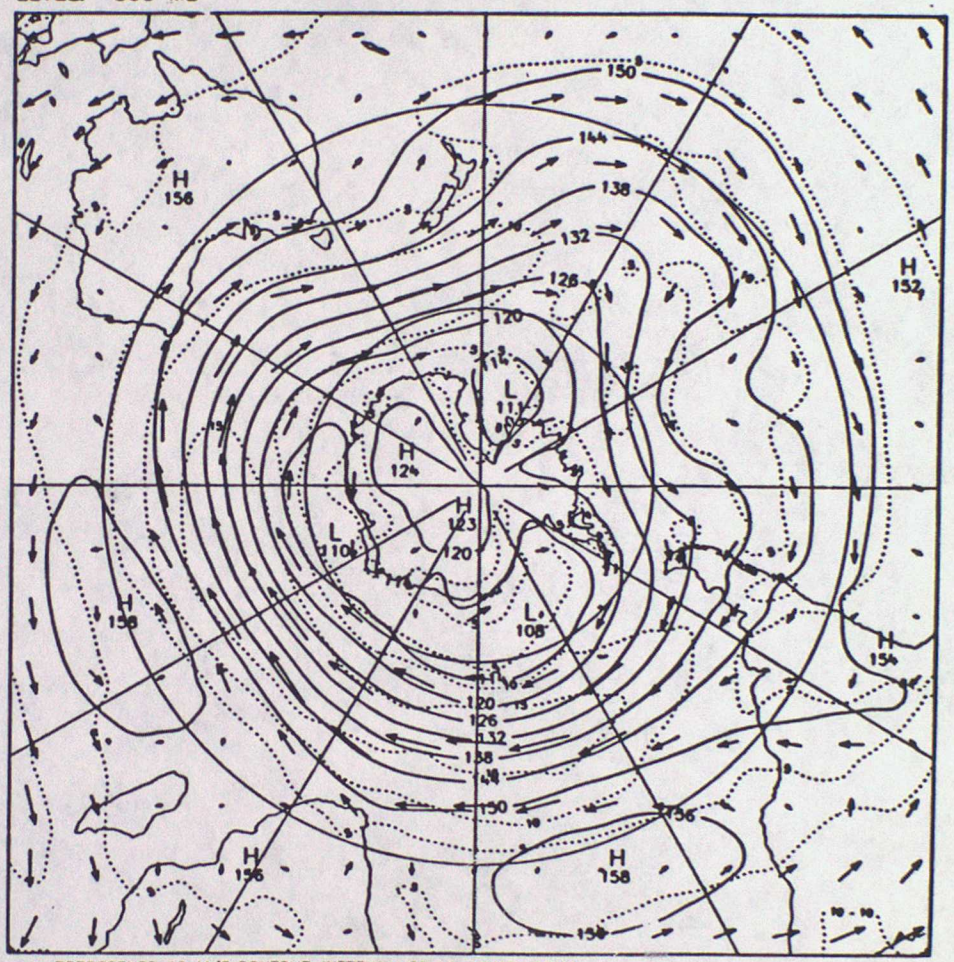

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OPERATIONAL ARCHIVE MEANS. JULY 1987
HEIGHTS, WIND ARROWS AND ISOTACHS.
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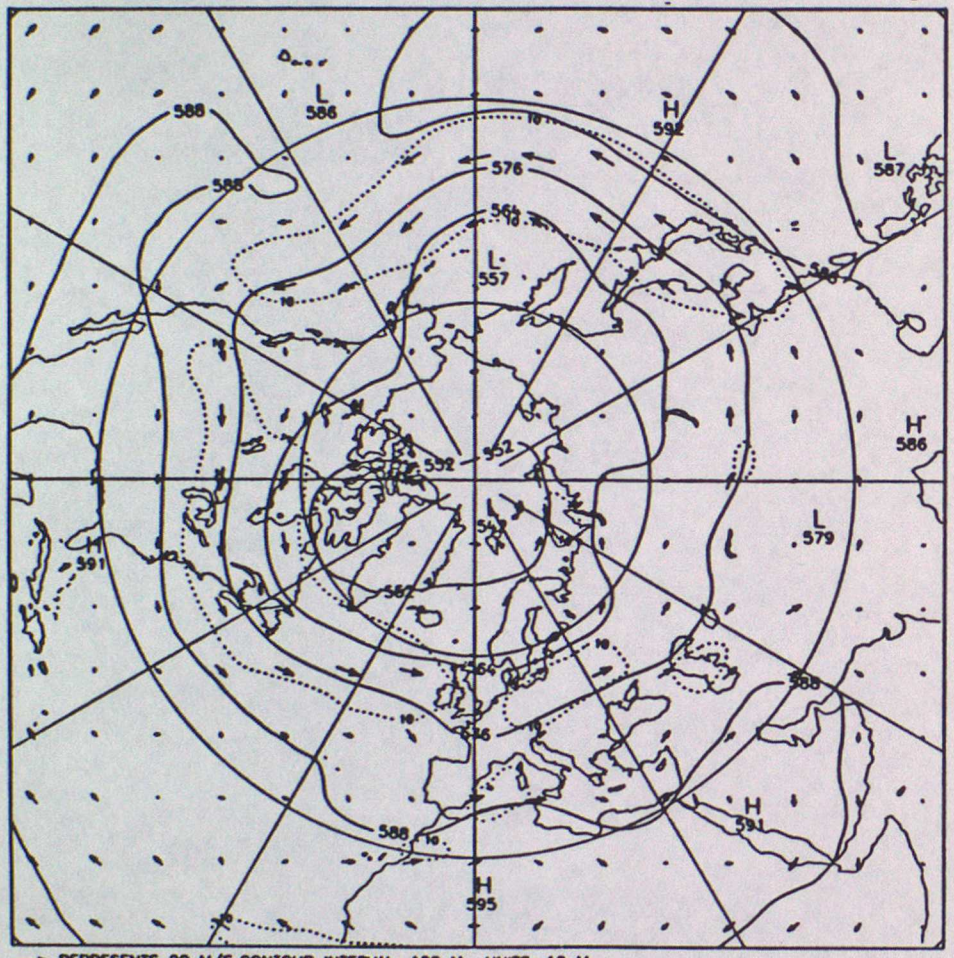

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OPERATIONAL ARCHIVE MEANS. JULY 1987
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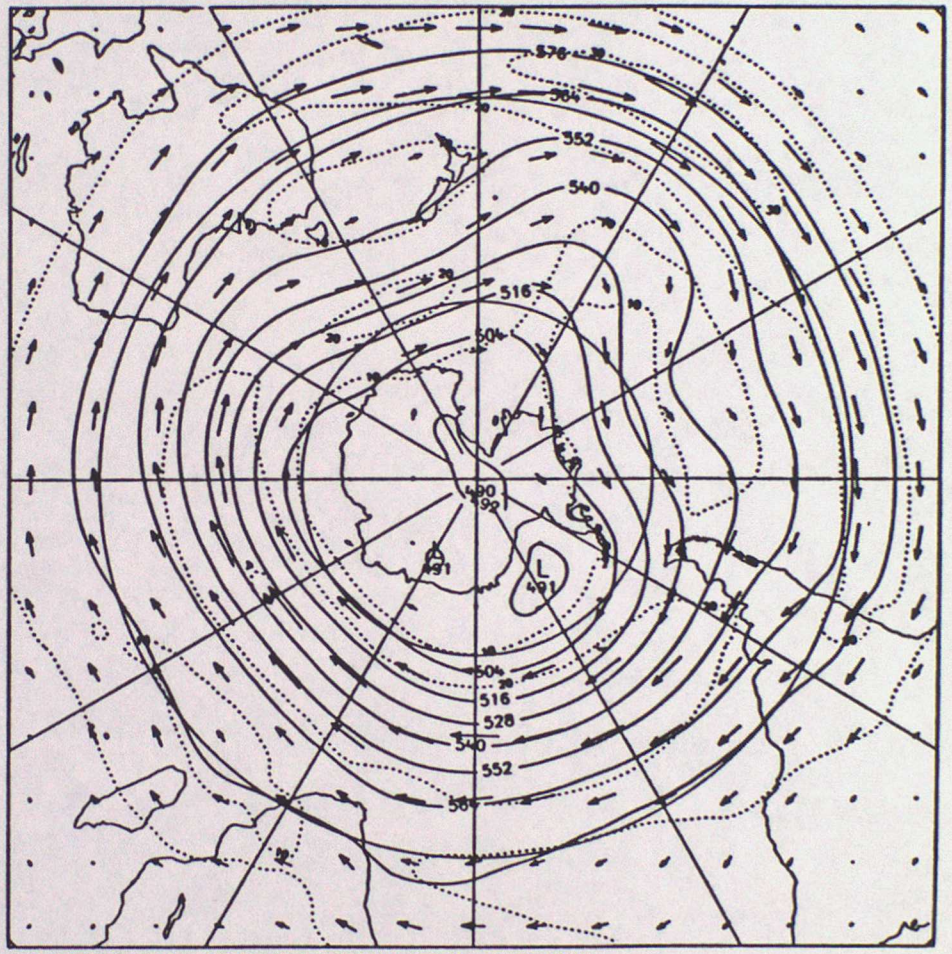

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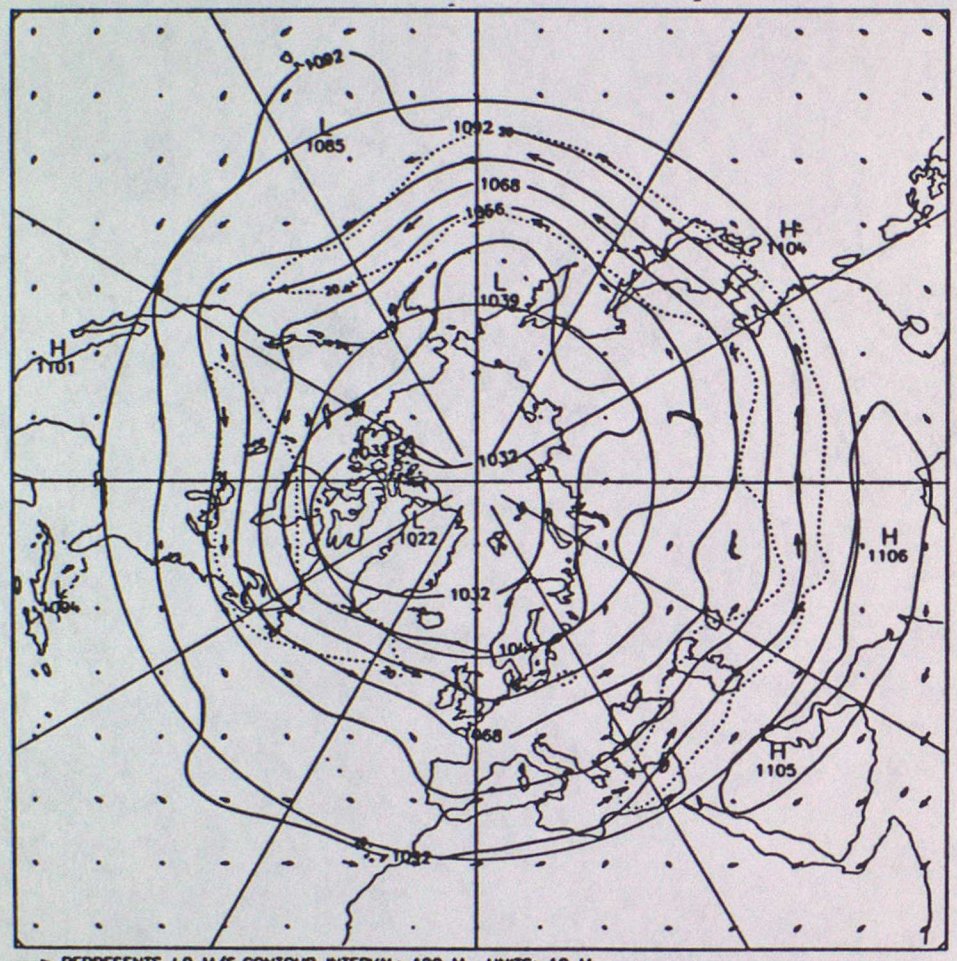

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OPERATIONAL ARCHIVE MEANS. JULY 1987
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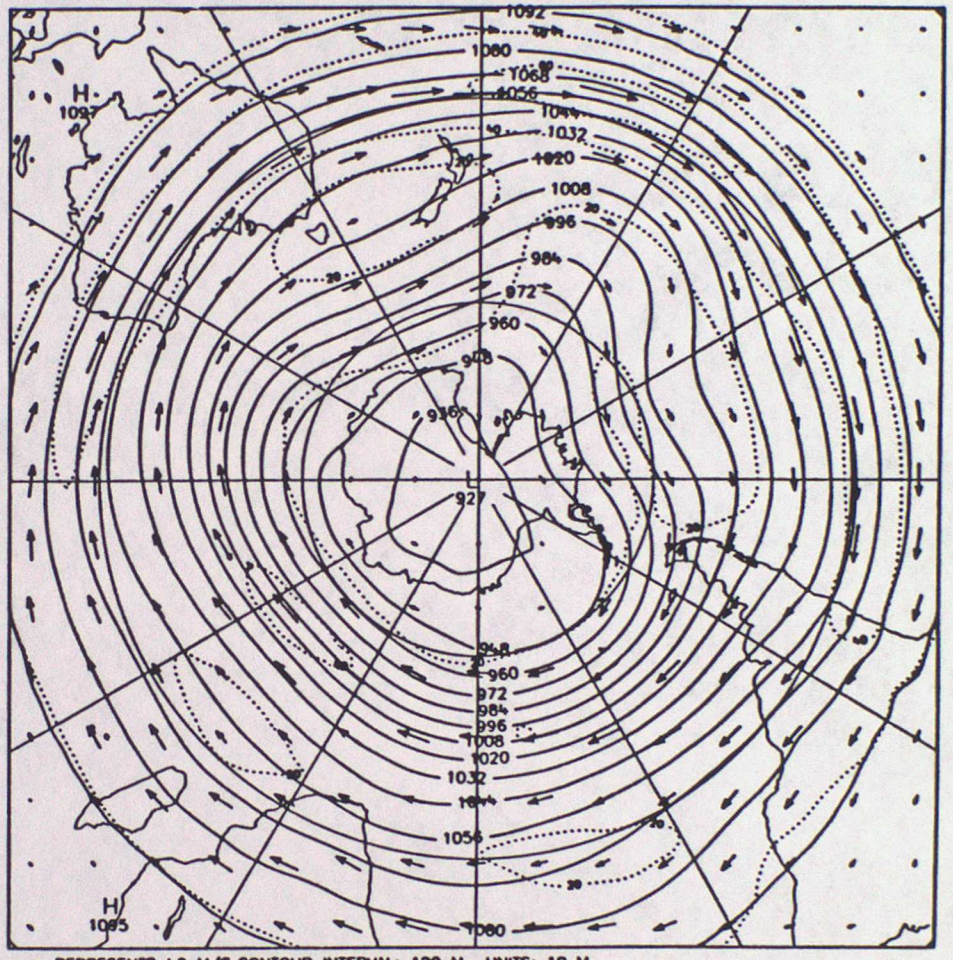

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OPERATIONAL ARCHIVE MEANS. JULY 1987
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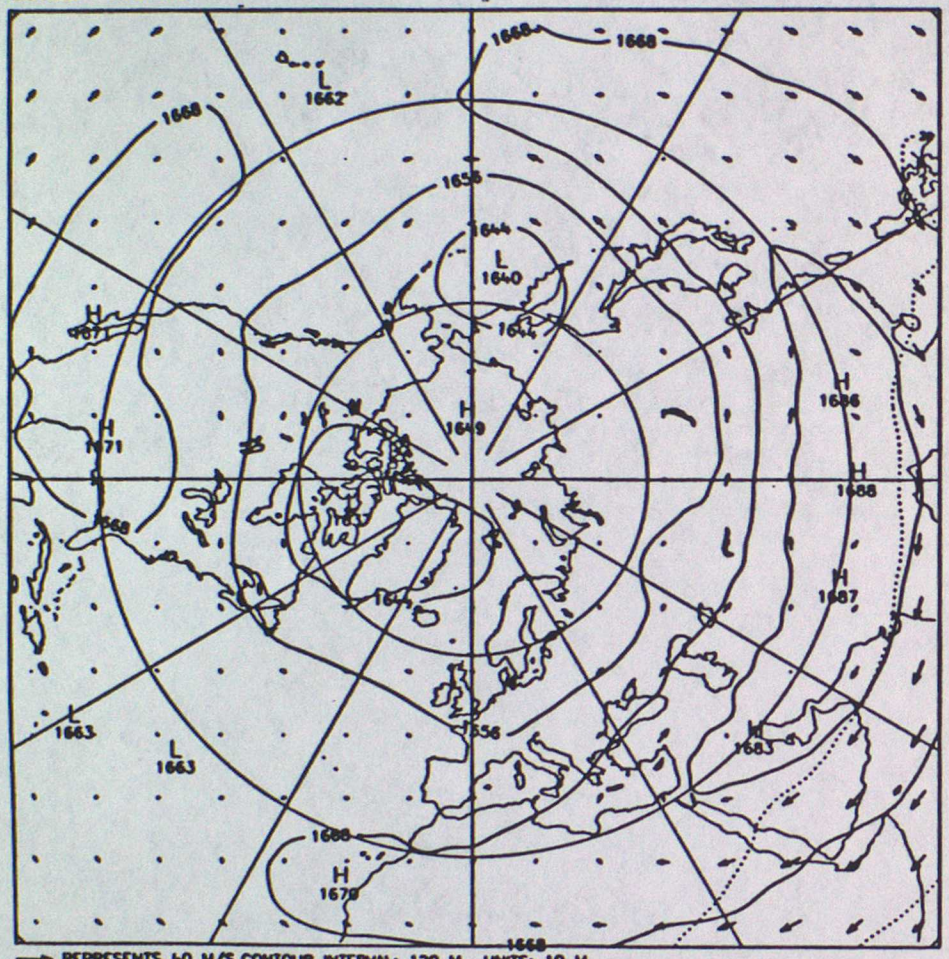

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OPERATIONAL ARCHIVE MEANS. JULY 1987
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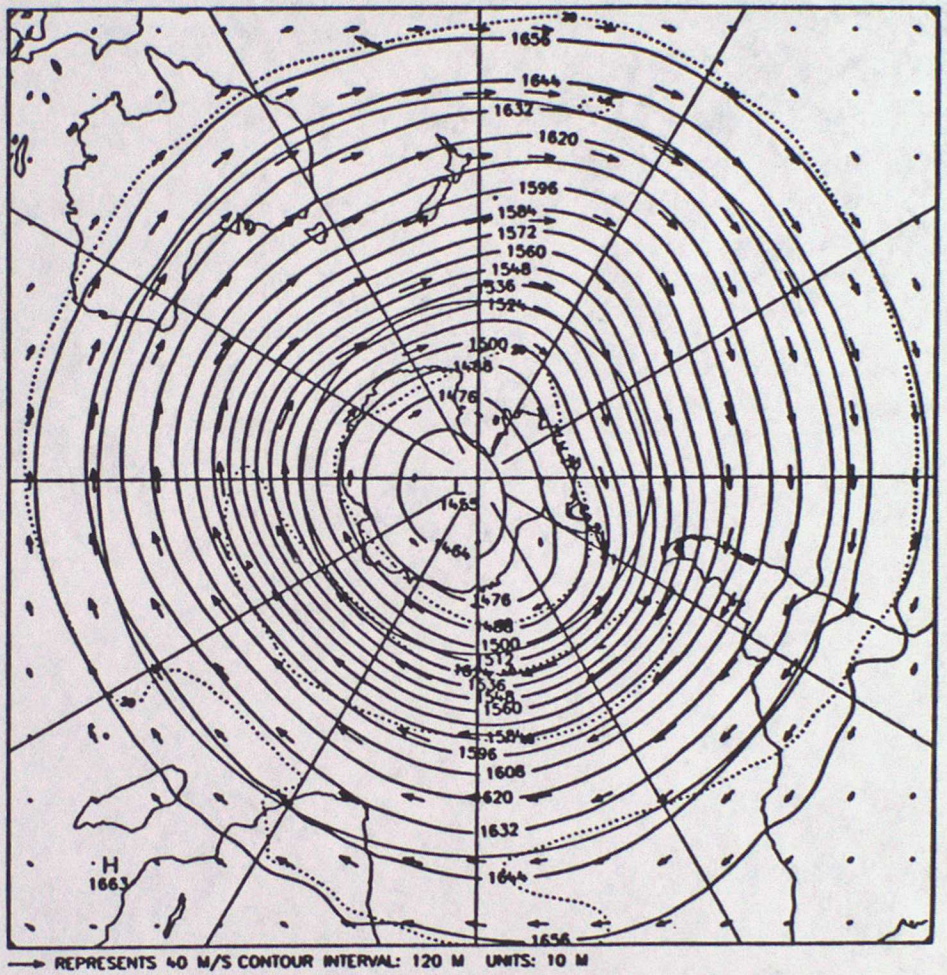

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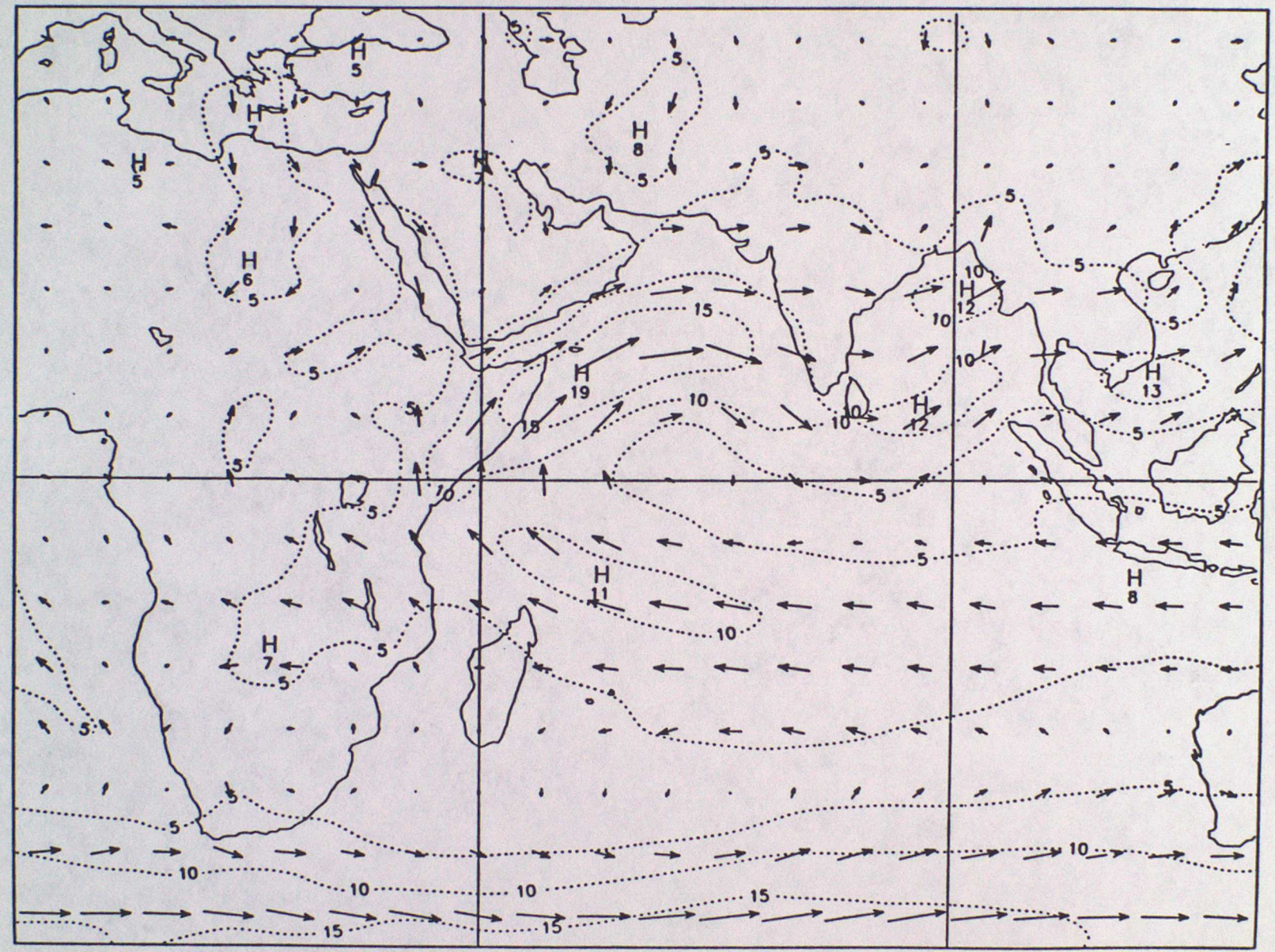
OPERATIONAL ARCHIVE MEANS. JULY 1987
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
VALID AT 0Z ON 1/7/1987 DAY 182 DATA TIME 12Z ON 31/7/1987 DAY 212
850 MBS. BETWEEN LONGS. 0 E - 120 E



OPERATIONAL ARCHIVE MEANS. JULY 1987
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
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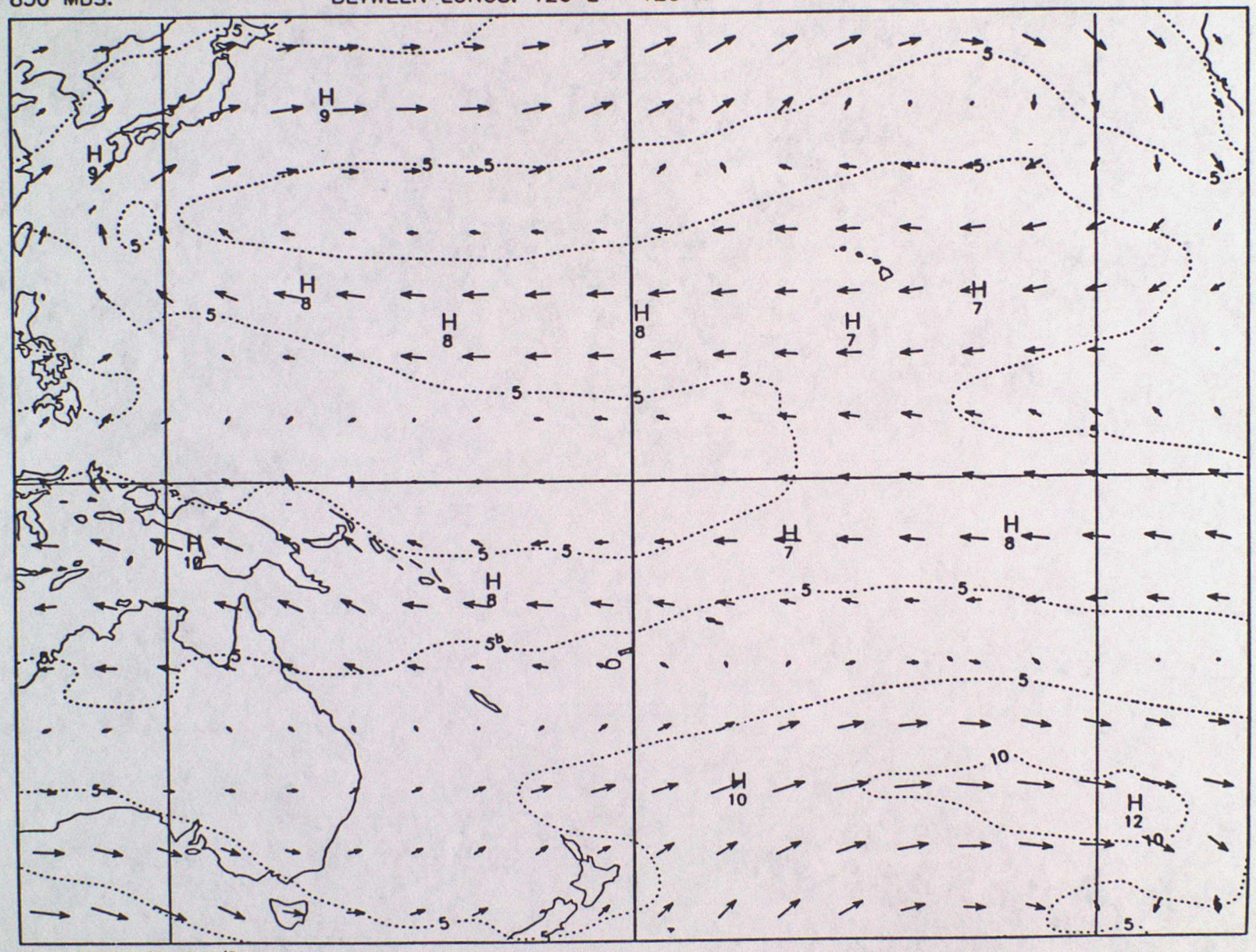
850 MBS. BETWEEN LONGS. 120 E - 120 W



→ REPRESENTS 10 M/S

OPERATIONAL ARCHIVE MEANS. JULY 1987
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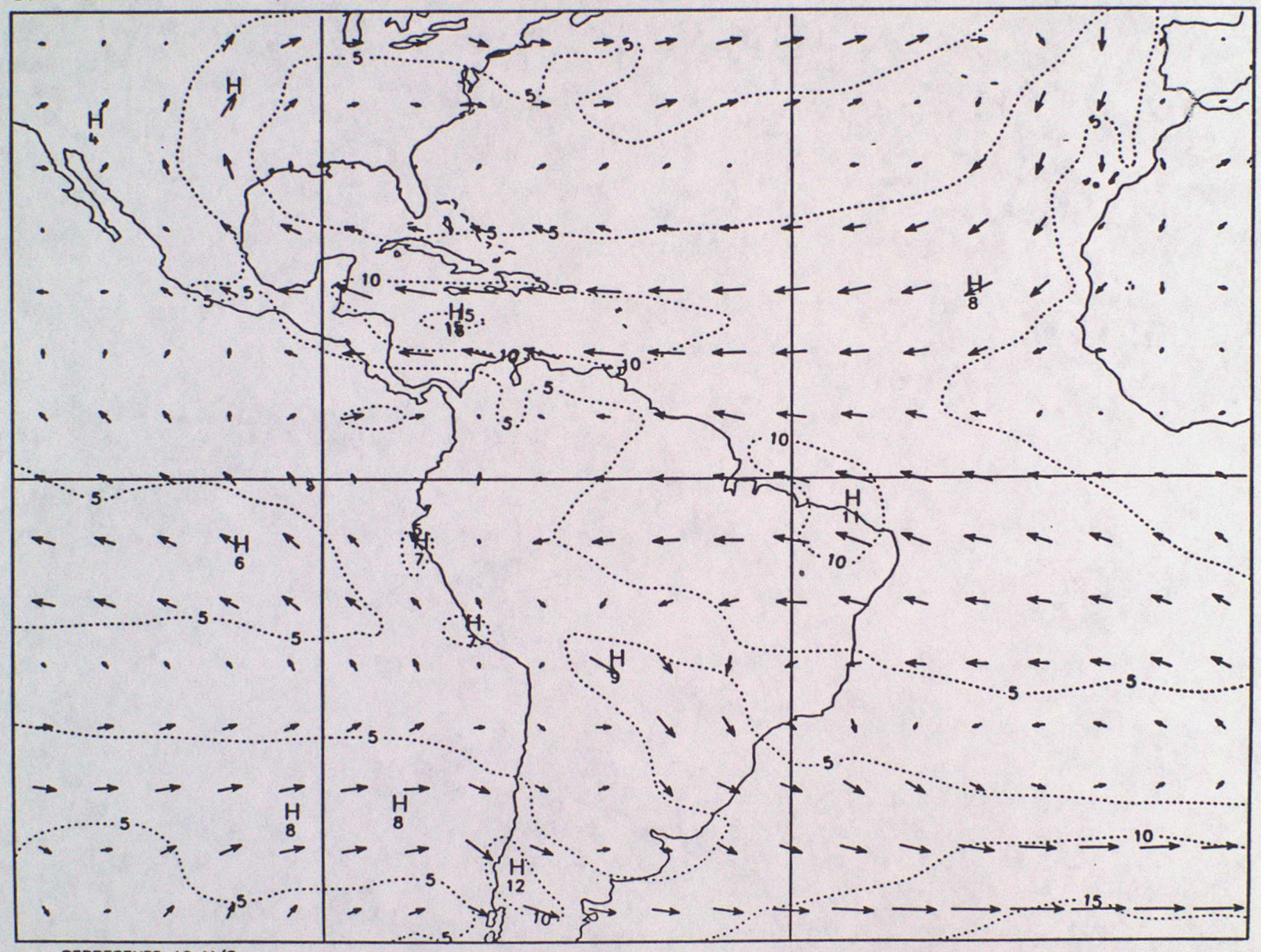

→ REPRESENTS 10 M/S

OPERATIONAL ARCHIVE MEANS. JULY 1987
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
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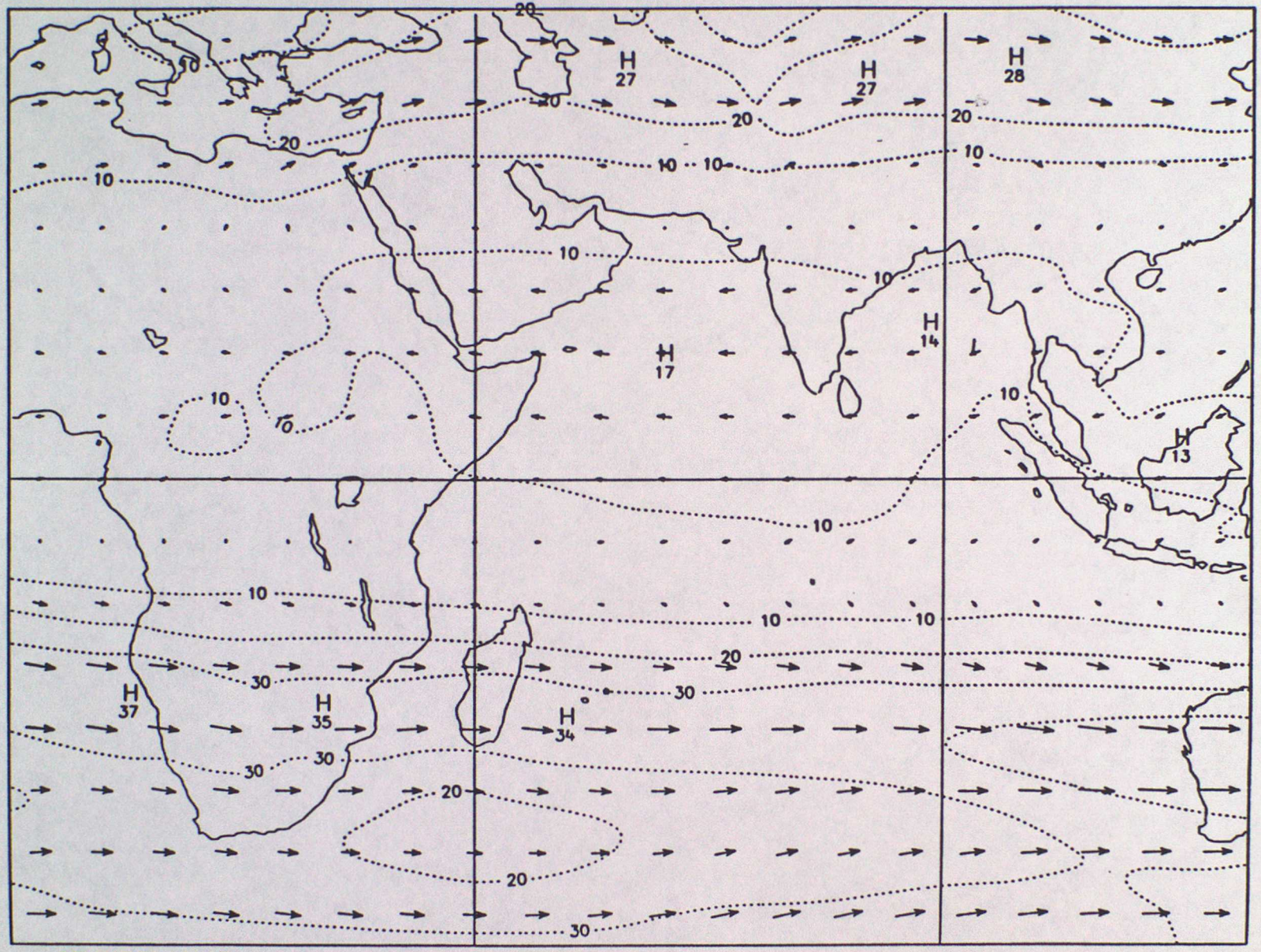
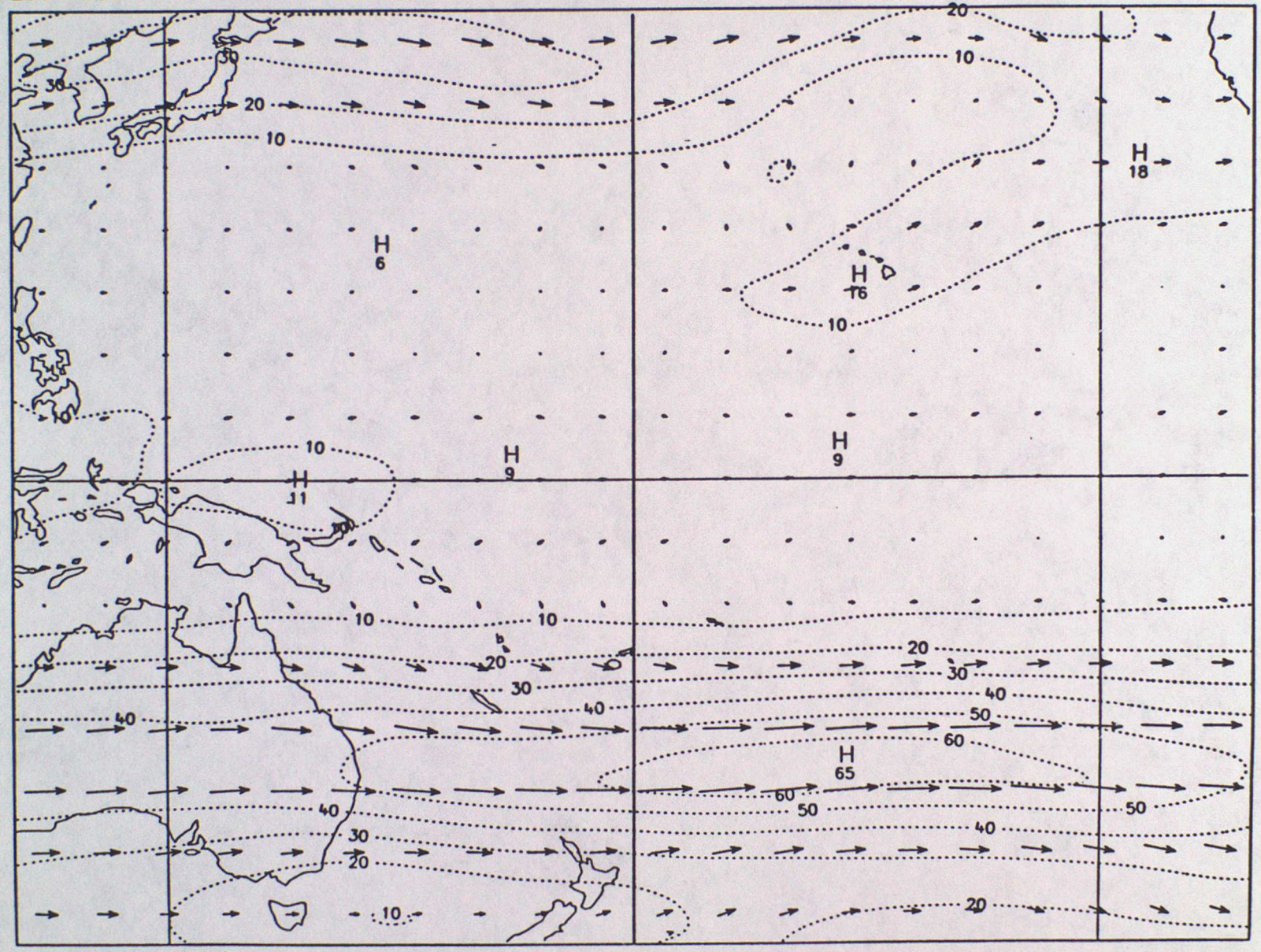
250 MBS. BETWEEN LONGS. 0 E - 120 E

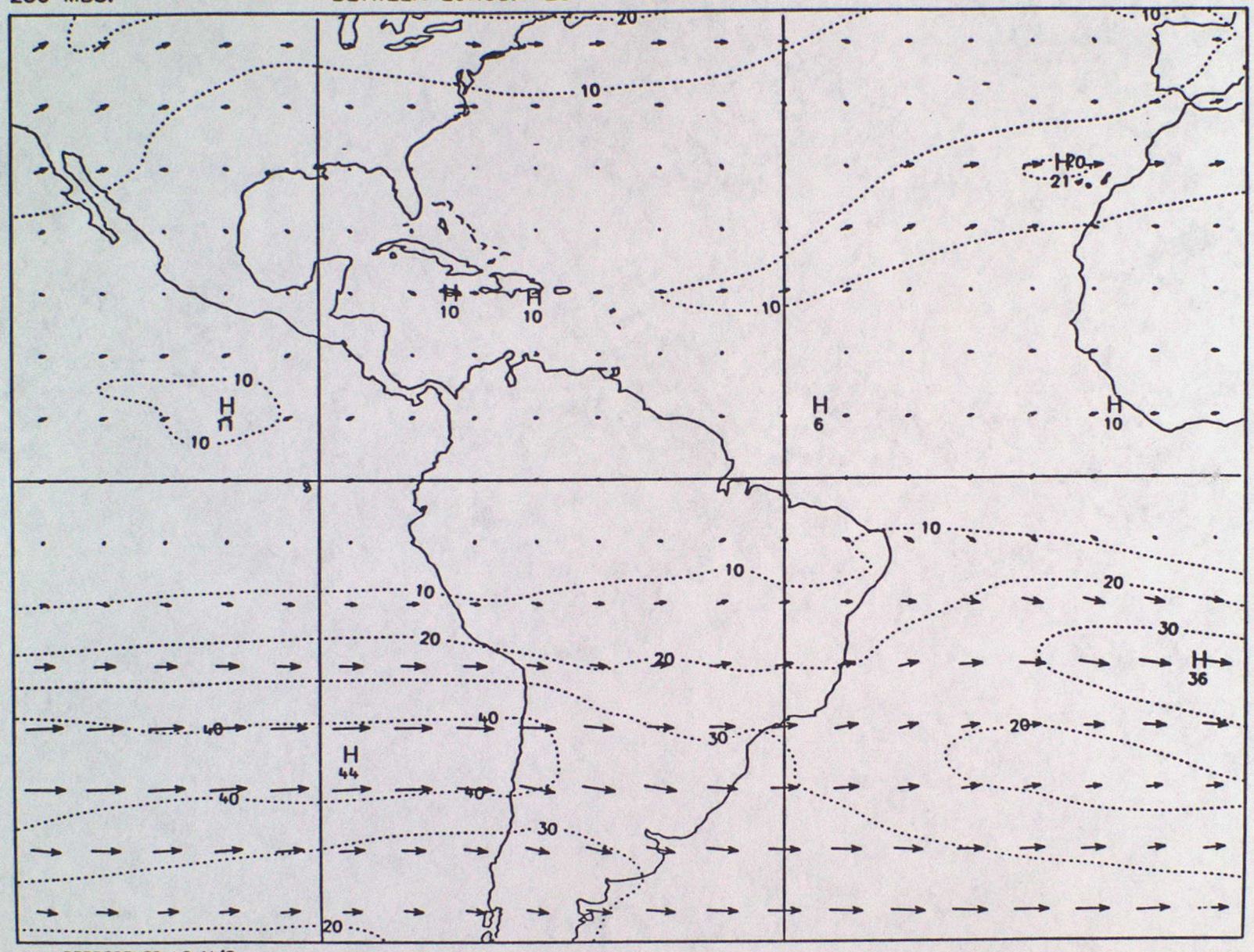


OPERATIONAL ARCHIVE MEANS. JULY 1987
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
VALID AT 0Z ON 1/7/1987 DAY 182 DATA TIME 12Z ON 31/7/1987 DAY 212
250 MBS. BETWEEN LONGS. 120 E - 120 W



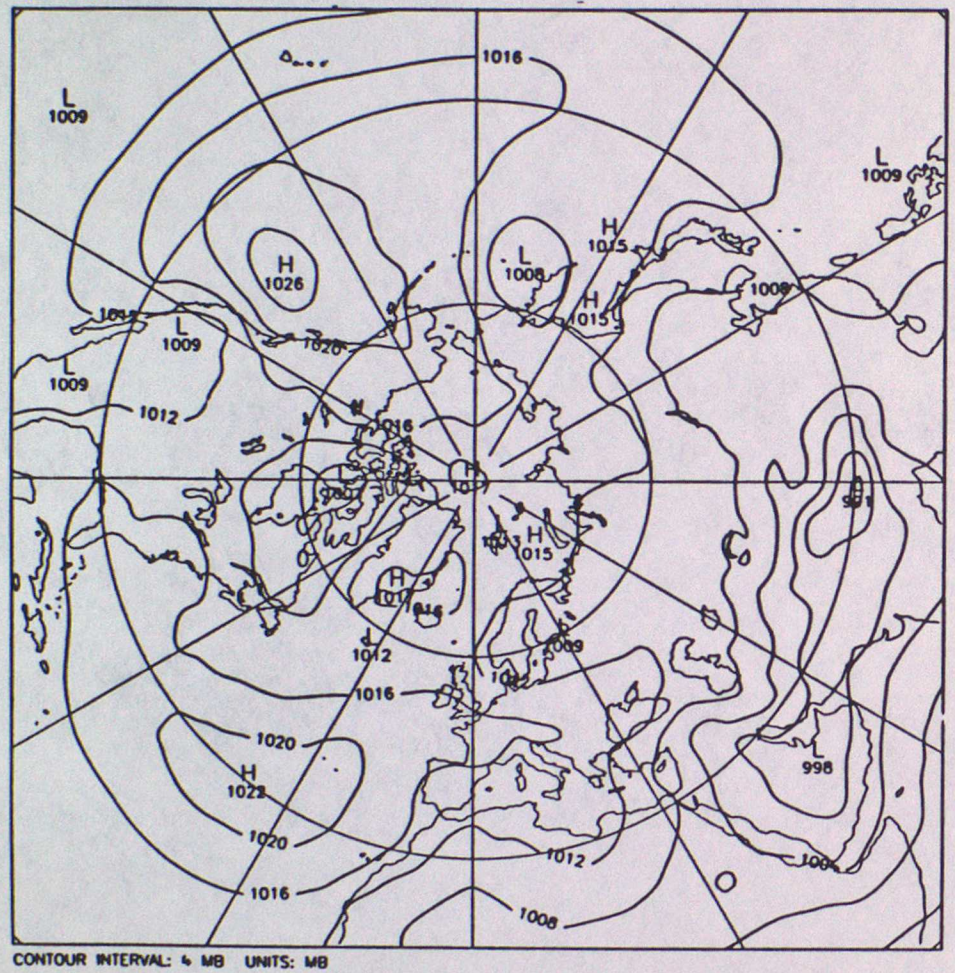
→ REPRESENTS 40 M/S

OPERATIONAL ARCHIVE MEANS. JULY 1987
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
VALID AT 0Z ON 1/7/1987 DAY 182 DATA TIME 12Z ON 31/7/1987 DAY 212
250 MBS. BETWEEN LONGS. 120 W - 0 W



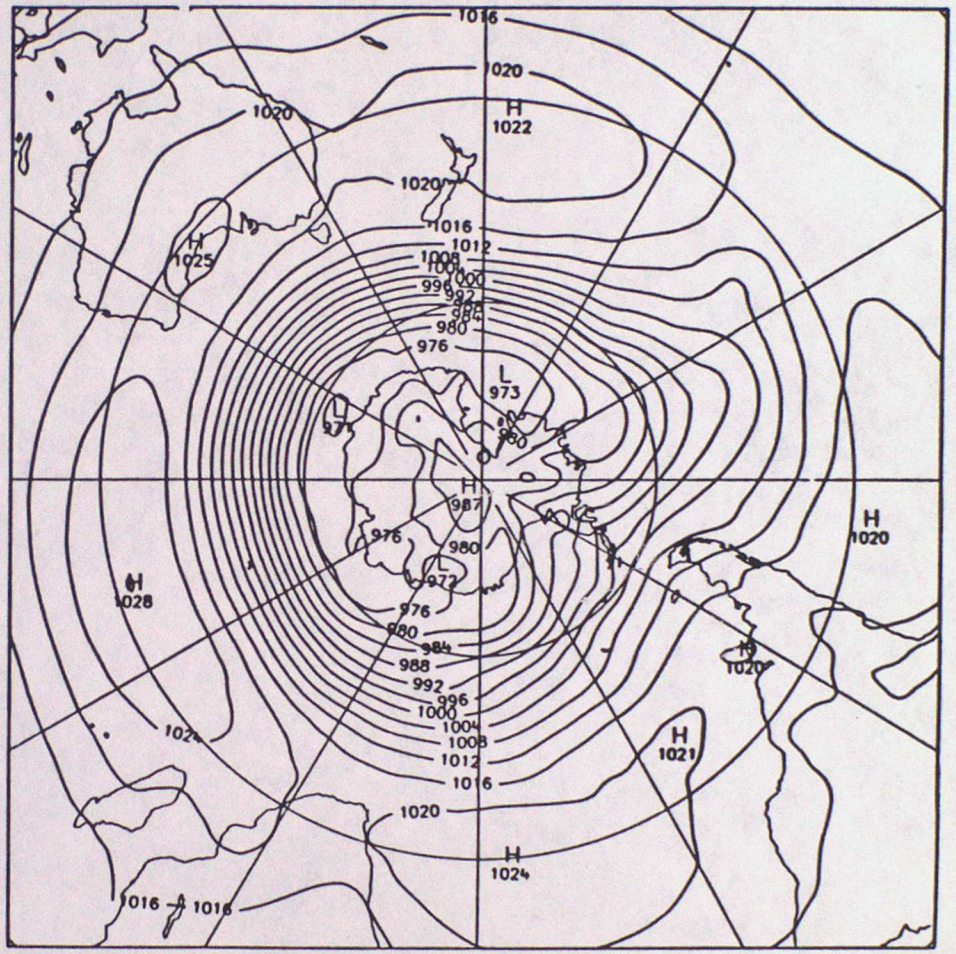
AUGUST
1987

OPERATIONAL ARCHIVE MEANS. AUGUST 1987
PMSL
VALID AT 0Z ON 1/8/1987 DAY 213 DATA TIME 12Z ON 31/8/1987 DAY 243
SEA LEVEL



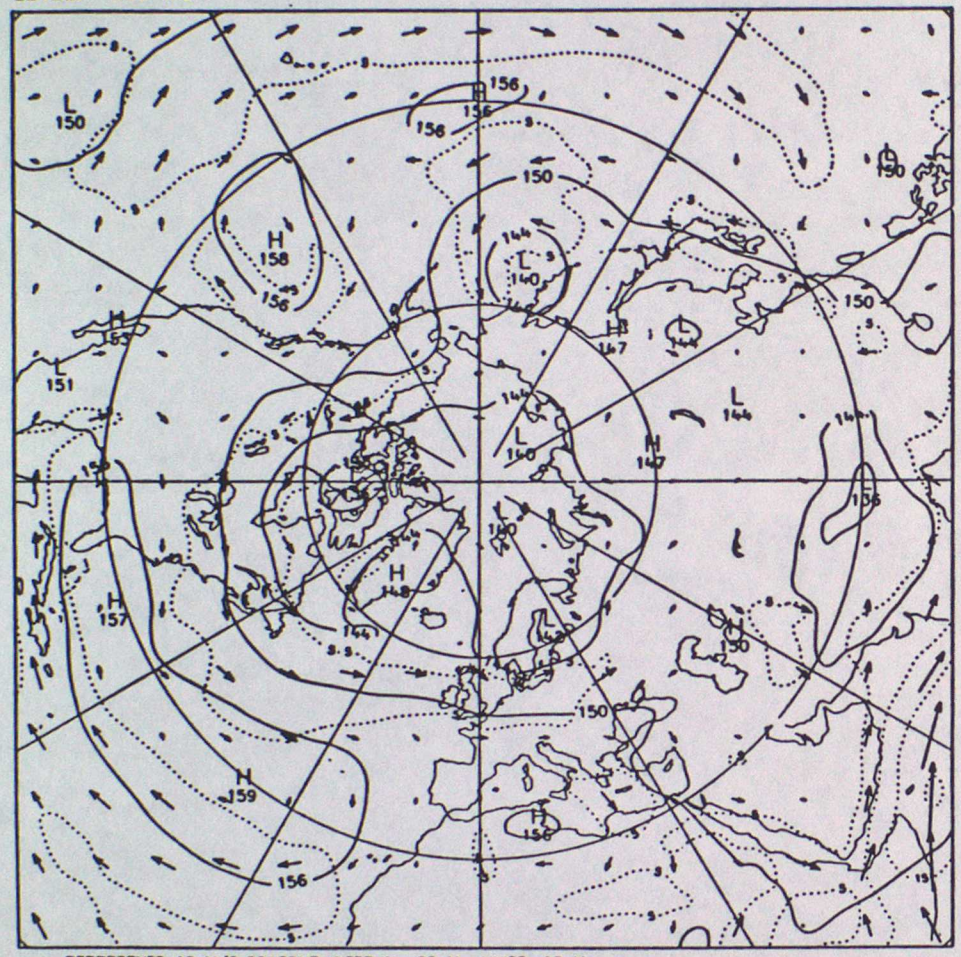
CONTOUR INTERVAL: 4 MB UNITS: MB

OPERATIONAL ARCHIVE MEANS. AUGUST 1987
PMSL
VALID AT 0Z ON 1/8/1987 DAY 213 DATA TIME 12Z ON 31/8/1987 DAY 243
SEA LEVEL



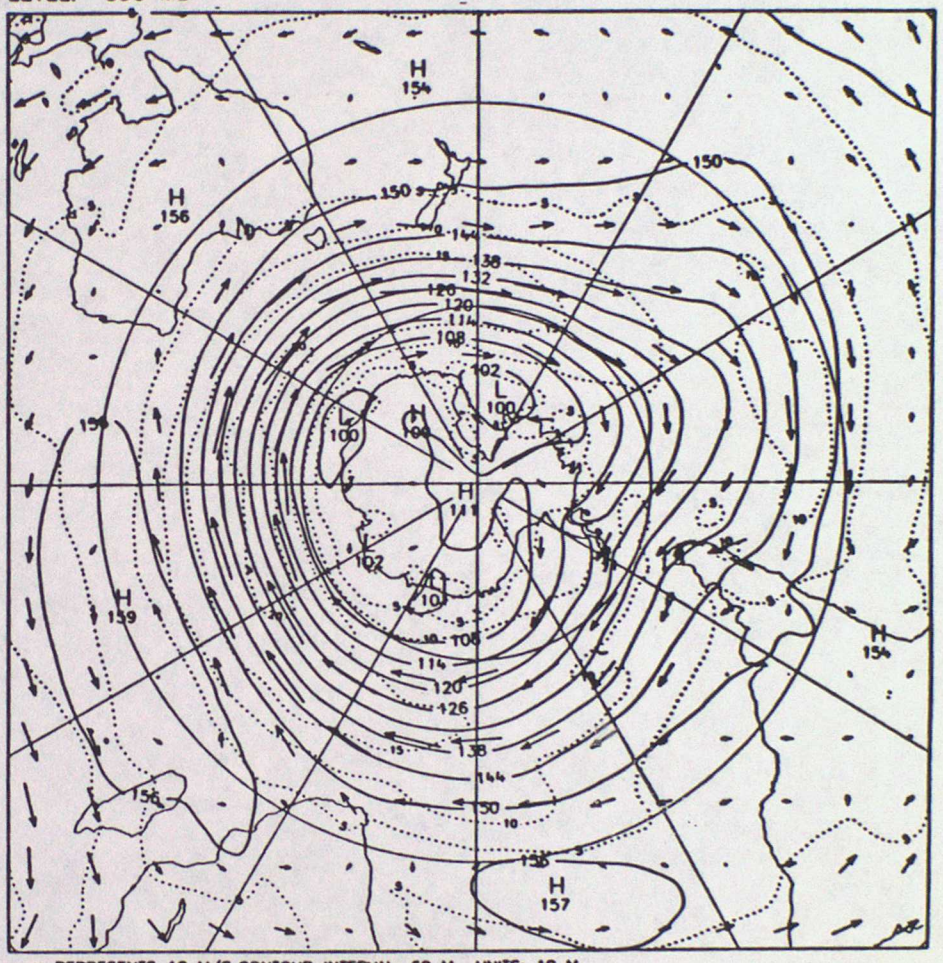
CONTOUR INTERVAL: 4 MB UNITS: MB

OPERATIONAL ARCHIVE MEANS. AUGUST 1987
HEIGHTS, WIND ARROWS AND ISOTACHS.
VALID AT 0Z ON 1/8/1987 DAY 213 DATA TIME 12Z ON 31/8/1987 DAY 243
LEVEL: 850 MB



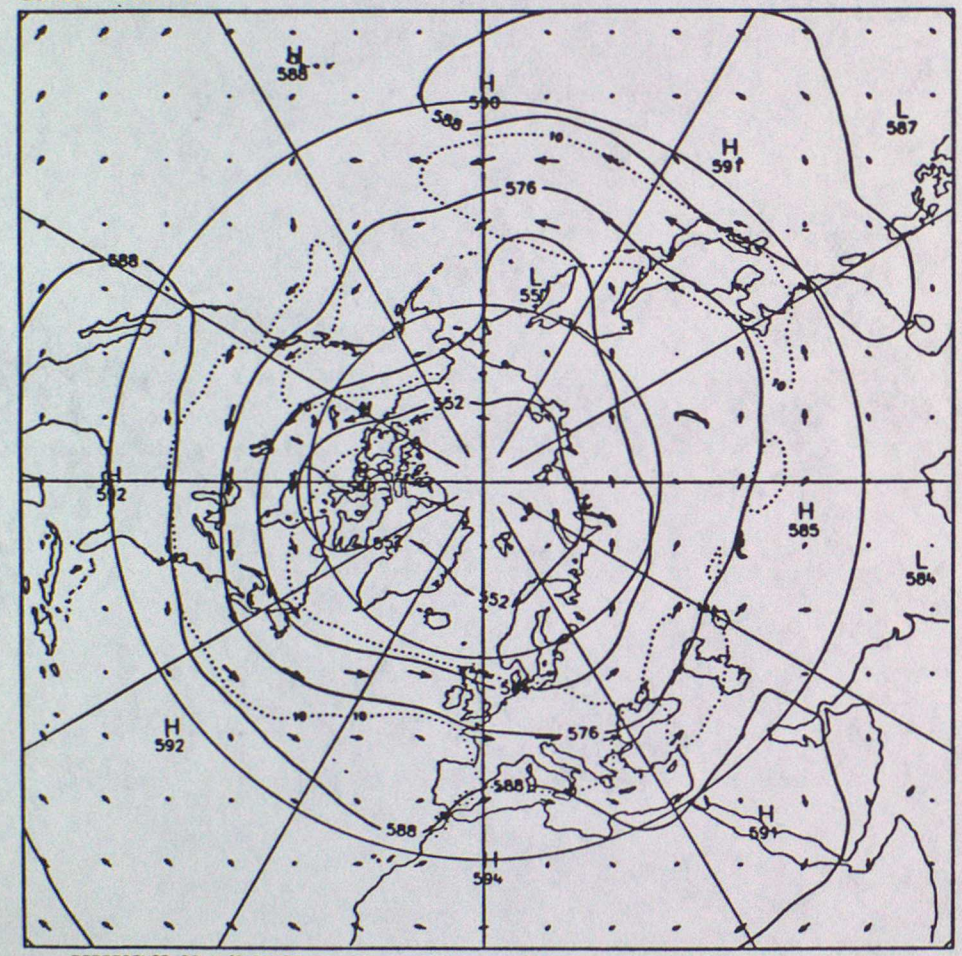
→ REPRESENTS 10 M/S CONTOUR INTERVAL: 60 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. AUGUST 1987
HEIGHTS, WIND ARROWS AND ISOTACHS.
VALID AT 0Z ON 1/8/1987 DAY 213 DATA TIME 12Z ON 31/8/1987 DAY 243
LEVEL: 850 MB



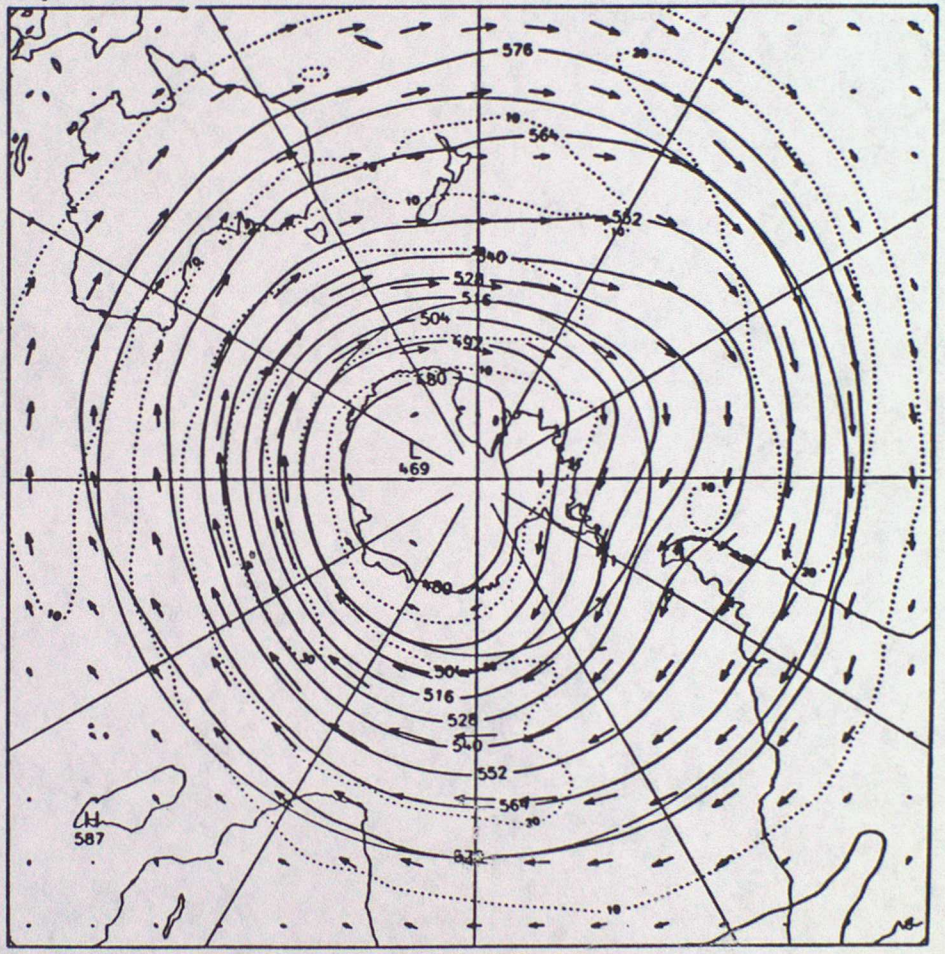
→ REPRESENTS 10 M/S CONTOUR INTERVAL: 60 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. AUGUST 1987
HEIGHTS, WIND ARROWS AND ISOTACHS.
VALID AT 0Z ON 1/8/1987 DAY 213 DATA TIME 12Z ON 31/8/1987 DAY 243
LEVEL: 500 MB



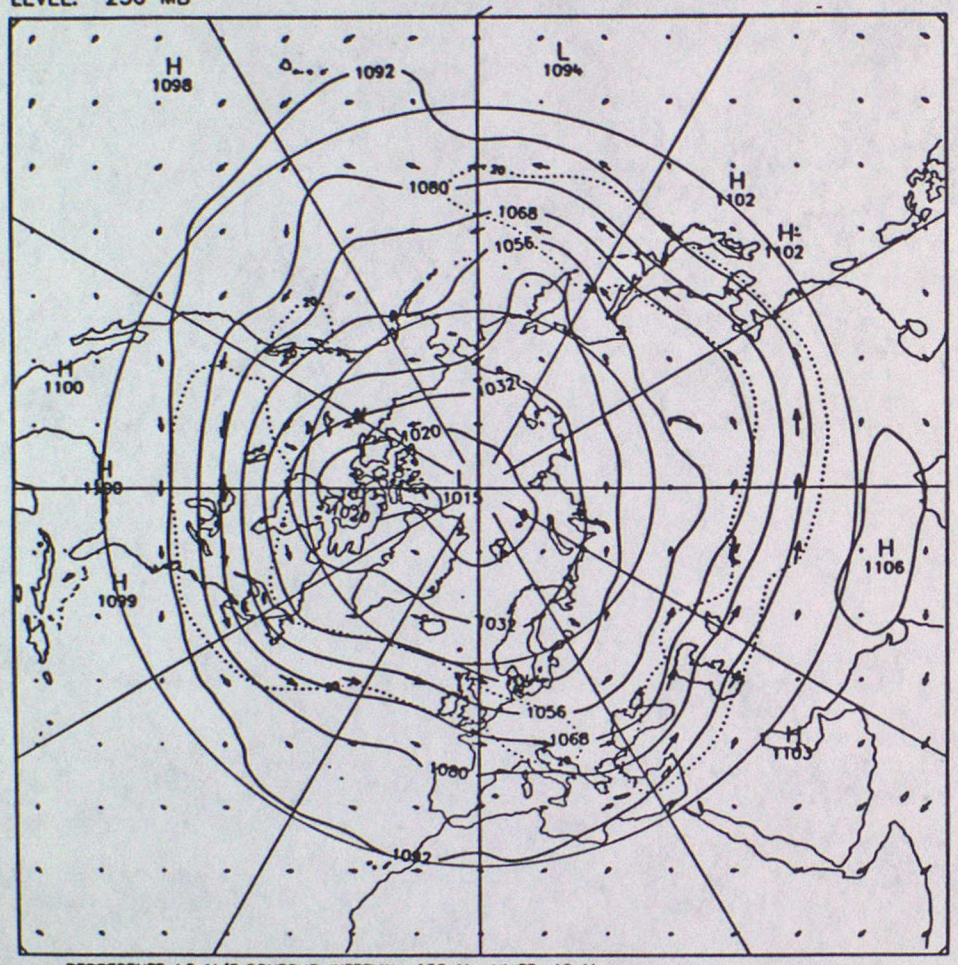
REPRESENTS 20 M/S CONTOUR INTERVAL: 120 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. AUGUST 1987
HEIGHTS, WIND ARROWS AND ISOTACHS.
VALID AT 0Z ON 1/8/1987 DAY 213 DATA TIME 12Z ON 31/8/1987 DAY 243
LEVEL: 500 MB



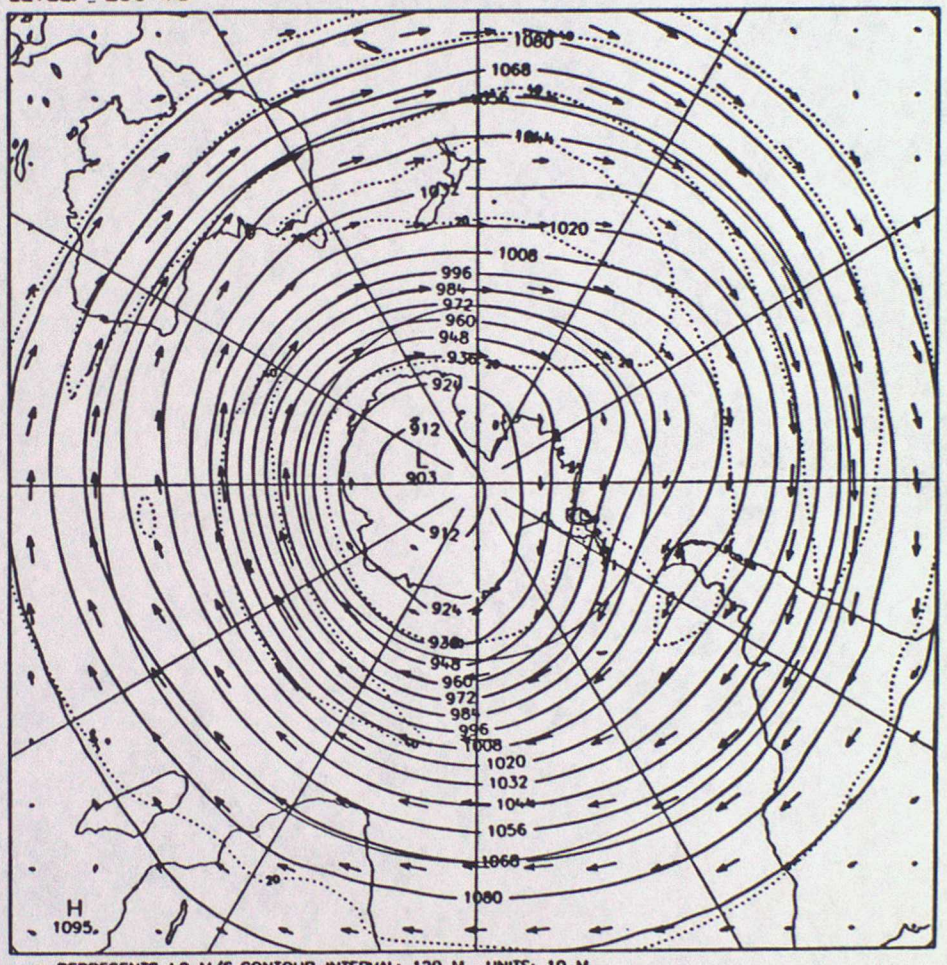
REPRESENTS 20 M/S CONTOUR INTERVAL: 120 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. AUGUST 1987
HEIGHTS, WIND ARROWS AND ISOTACHS.
VALID AT 0Z ON 1/8/1987 DAY 213 DATA TIME 12Z ON 31/8/1987 DAY 243
LEVEL: 250 MB



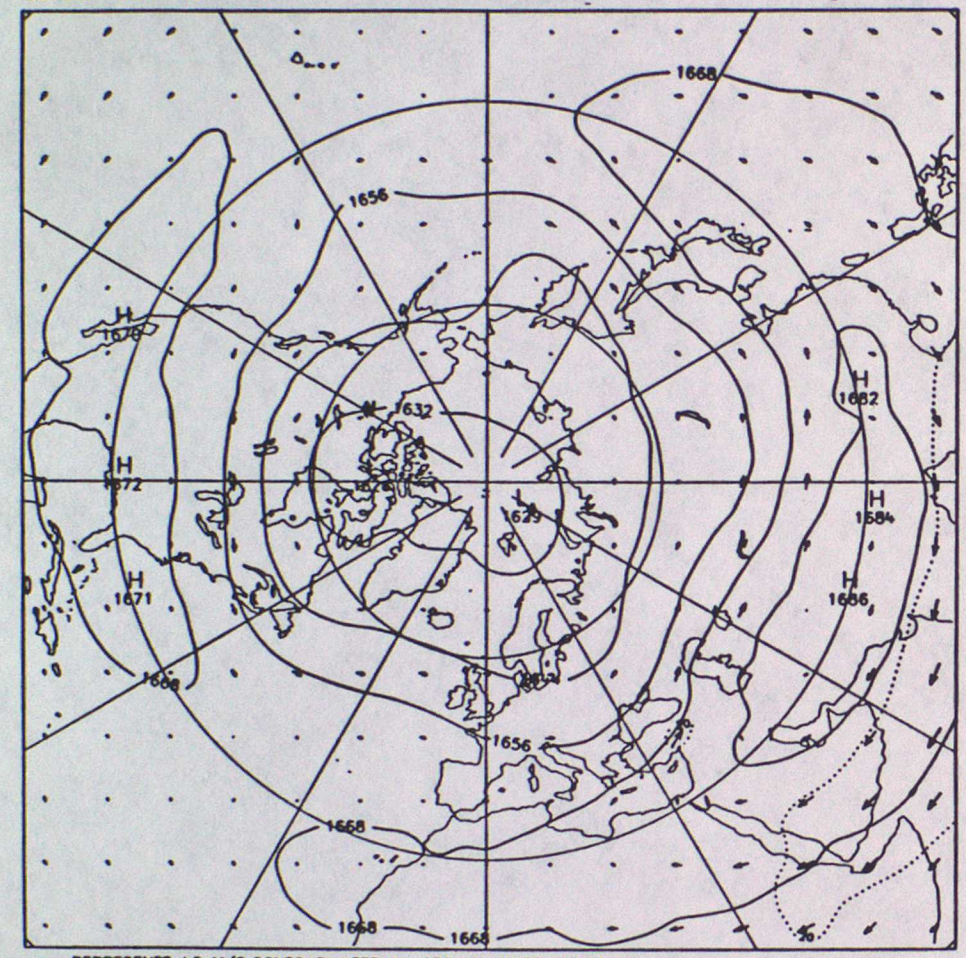
→ REPRESENTS 40 M/S CONTOUR INTERVAL: 120 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. AUGUST 1987
HEIGHTS, WIND ARROWS AND ISOTACHS.
VALID AT 0Z ON 1/8/1987 DAY 213 DATA TIME 12Z ON 31/8/1987 DAY 243
LEVEL: 250 MB



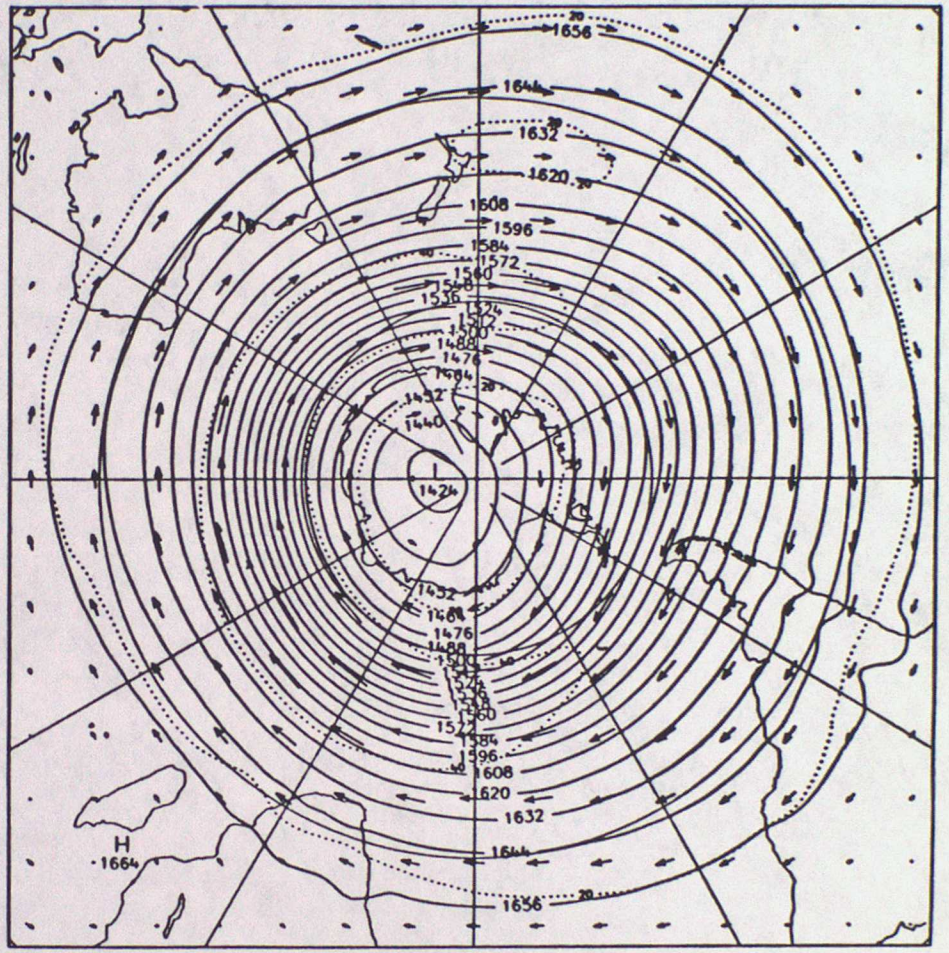
→ REPRESENTS 40 M/S CONTOUR INTERVAL: 120 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. AUGUST 1987
HEIGHTS, WIND ARROWS AND ISOTACHS.
VALID AT 0Z ON 1/8/1987 DAY 213 DATA TIME 12Z ON 31/8/1987 DAY 243
LEVEL: 100 MB



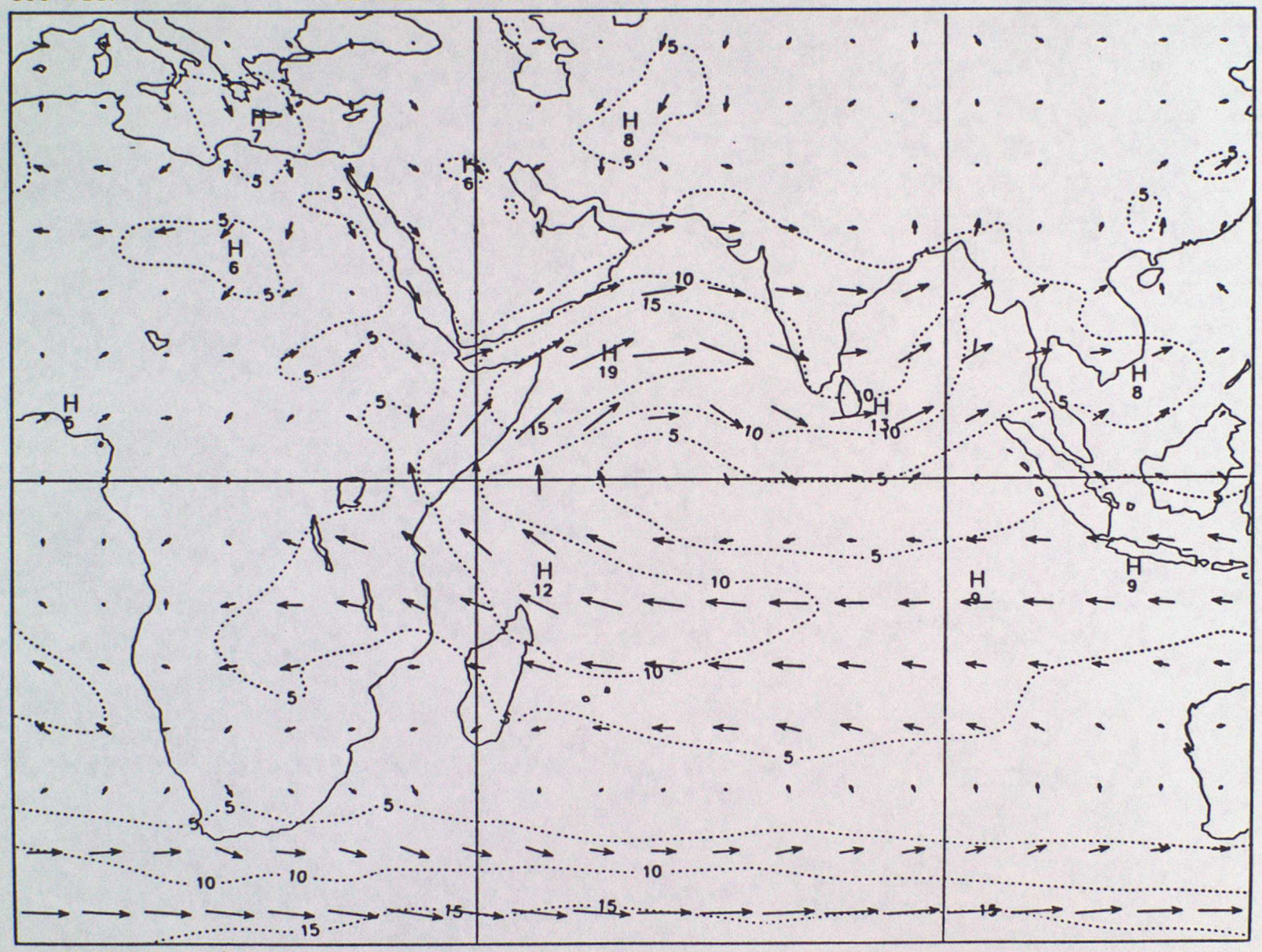
→ REPRESENTS 40 M/S CONTOUR INTERVAL: 120 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. AUGUST 1987
HEIGHTS, WIND ARROWS AND ISOTACHS.
VALID AT 0Z ON 1/8/1987 DAY 213 DATA TIME 12Z ON 31/8/1987 DAY 243
LEVEL: 100 MB



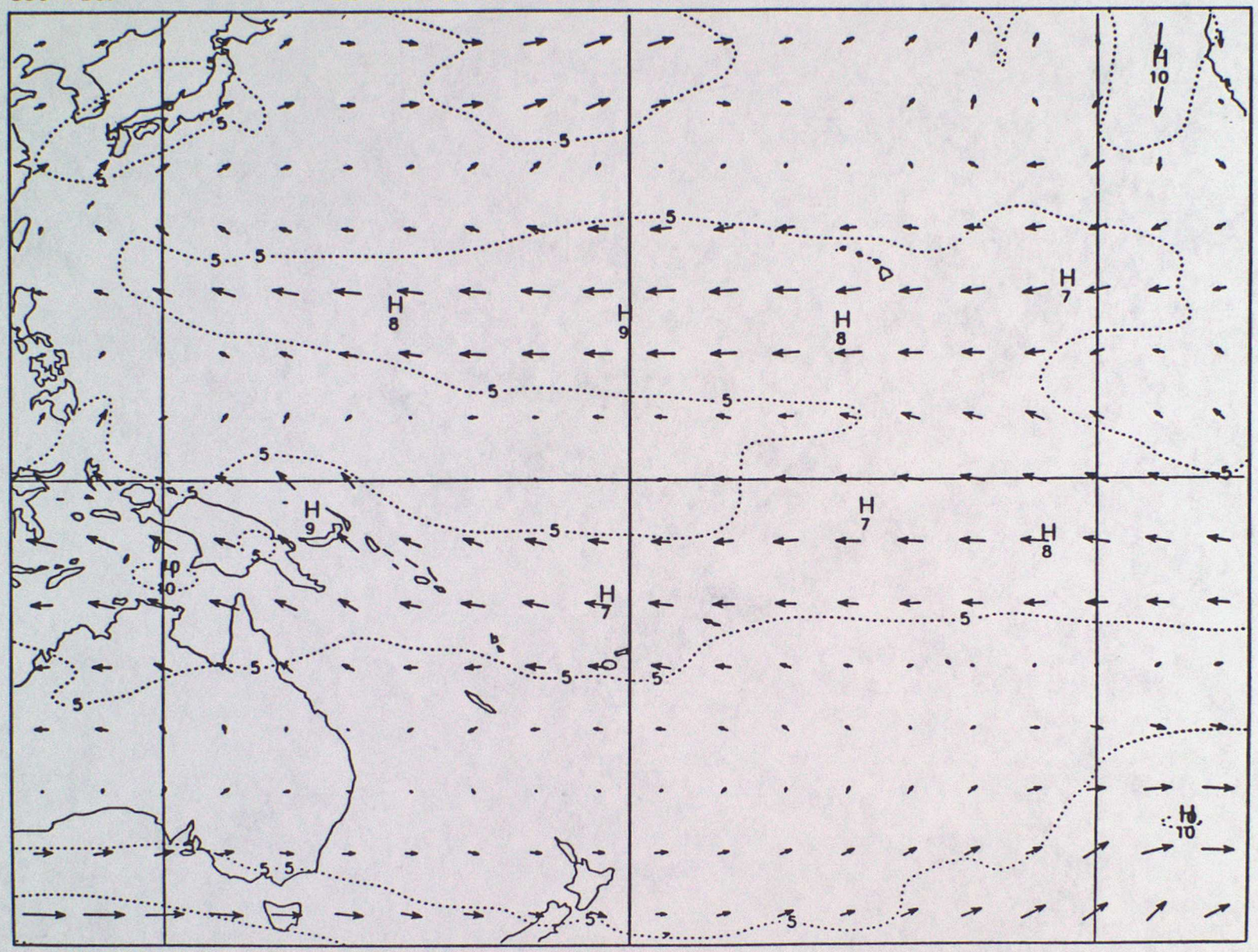
→ REPRESENTS 40 M/S CONTOUR INTERVAL: 120 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. AUGUST 1987
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
VALID AT 0Z ON 1/8/1987 DAY 213 DATA TIME 12Z ON 31/8/1987 DAY 243
850 MBS. BETWEEN LONGS. 0 E - 120 E



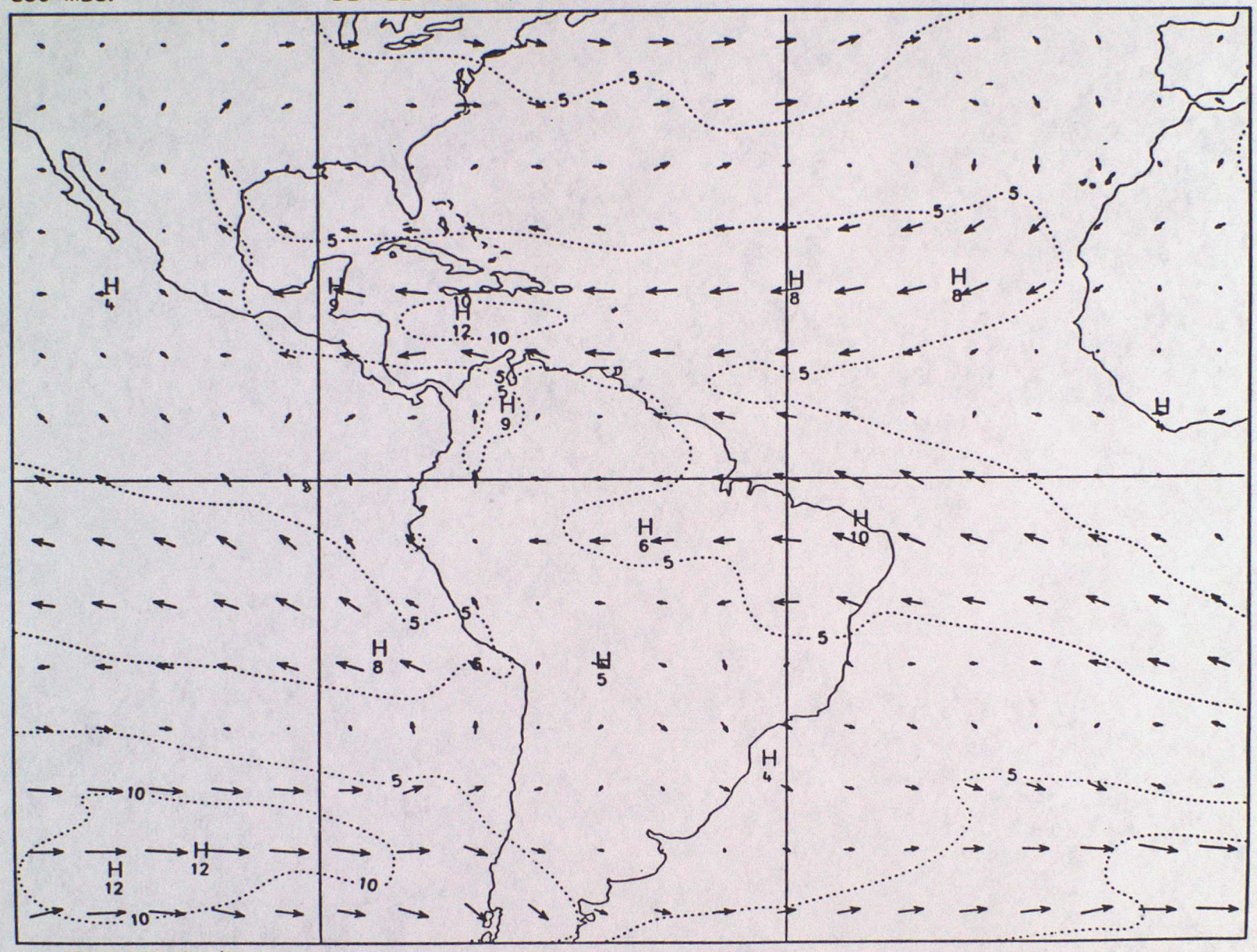
→ REPRESENTS 10 M/S

OPERATIONAL ARCHIVE MEANS. AUGUST 1987
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
VALID AT 0Z ON 1/8/1987 DAY 213 DATA TIME 12Z ON 31/8/1987 DAY 243
850 MBS. BETWEEN LONGS. 120 E - 120 W

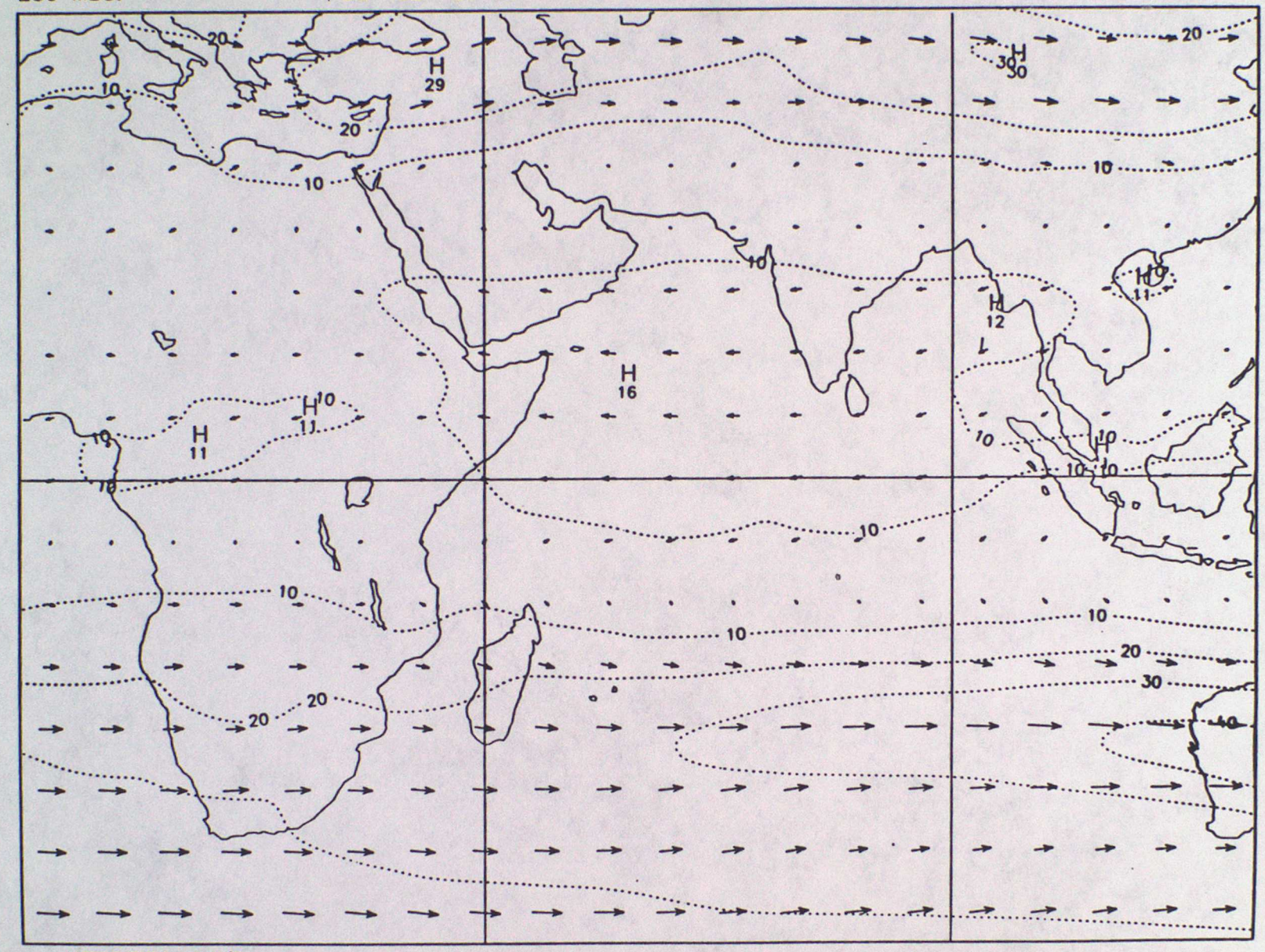


→ REPRESENTS 10 M/S

OPERATIONAL ARCHIVE MEANS. AUGUST 1987
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
VALID AT 0Z ON 1/8/1987 DAY 213 DATA TIME 12Z ON 31/8/1987 DAY 243
850 MBS. BETWEEN LONGS. 120 W - 0 W

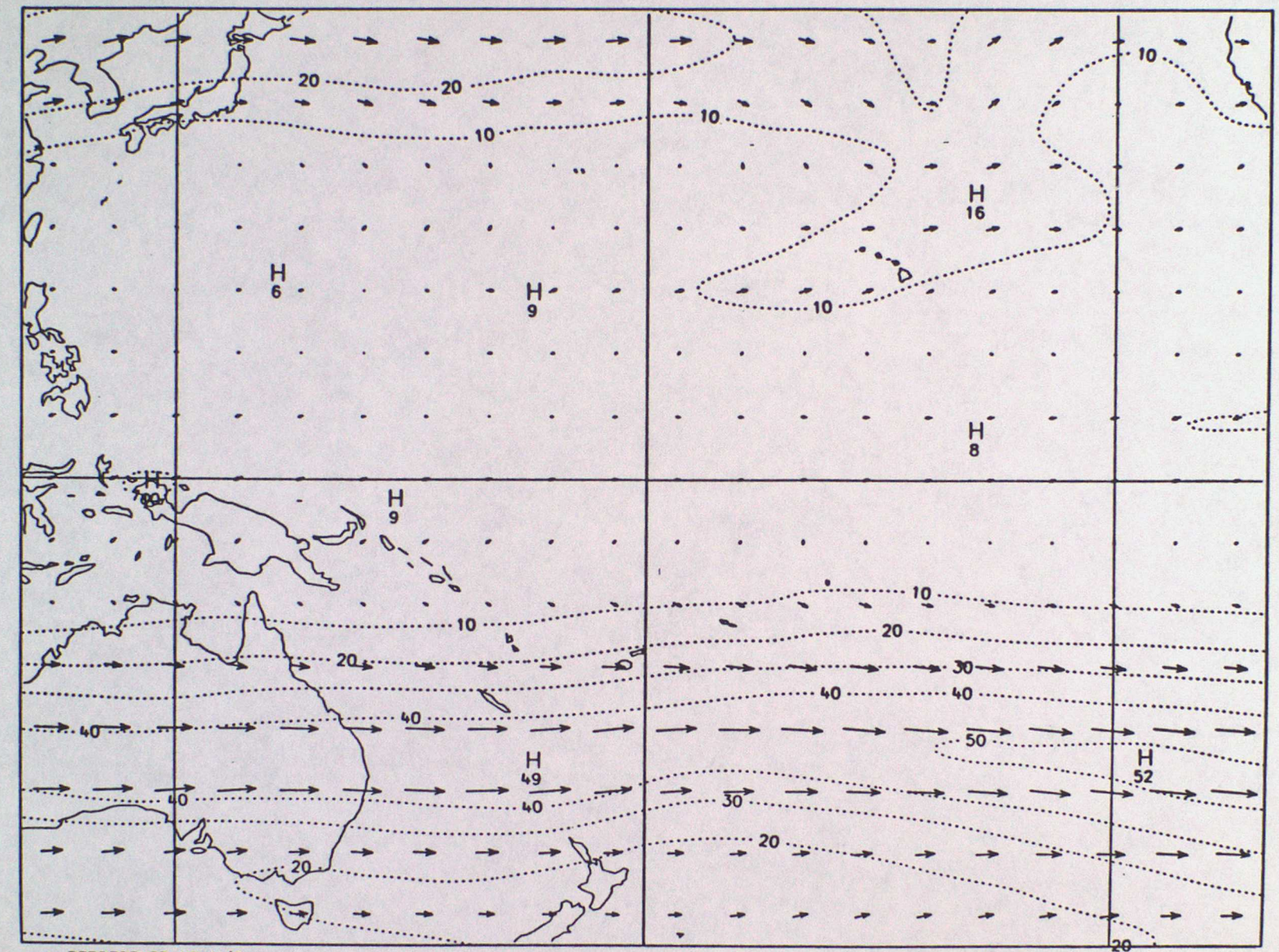


OPERATIONAL ARCHIVE MEANS. AUGUST 1987
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
VALID AT 0Z ON 1/8/1987 DAY 213 DATA TIME 12Z ON 31/8/1987 DAY 243
250 MBS. BETWEEN LONGS. 0 E - 120 E



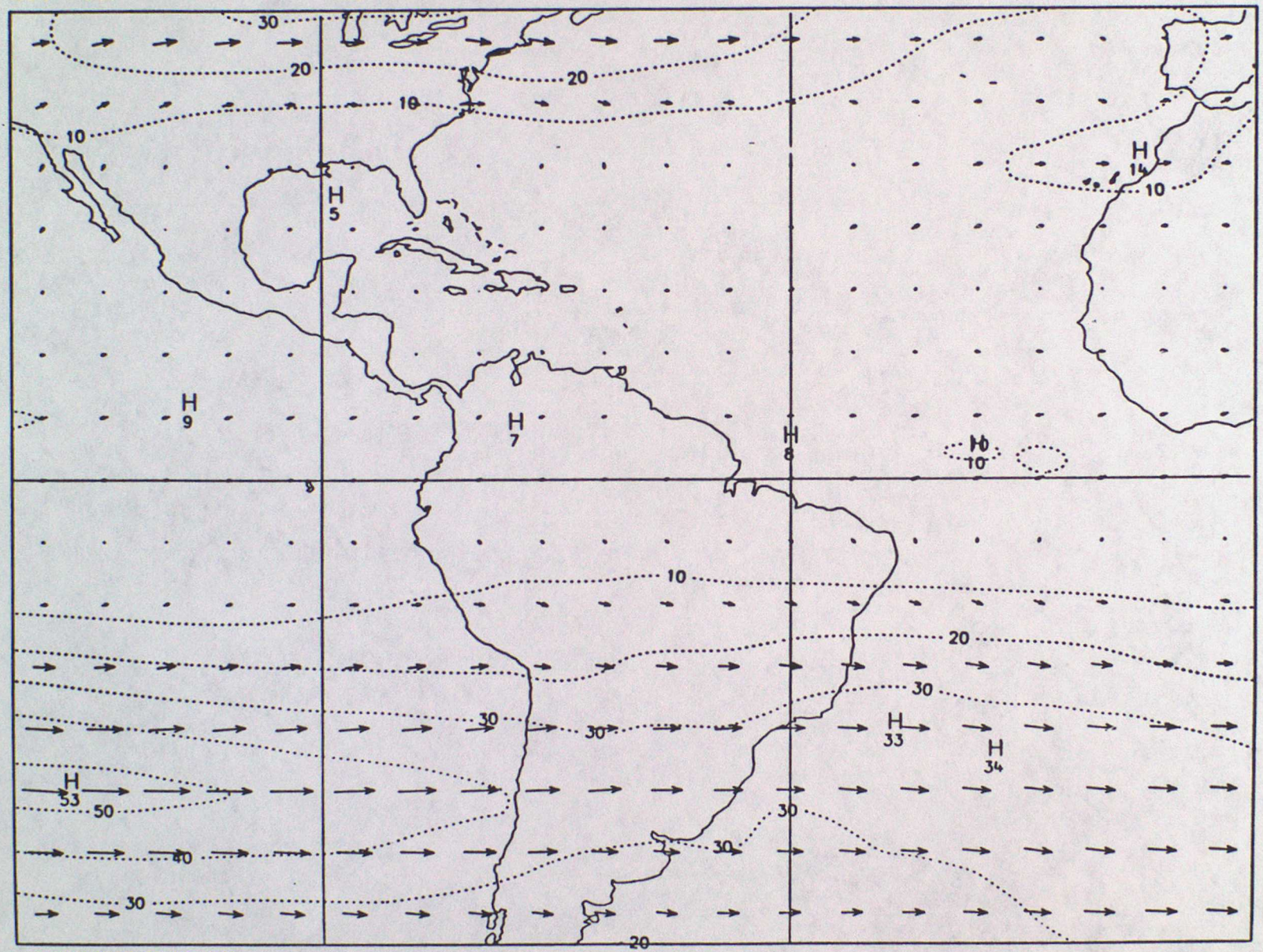
→ REPRESENTS 40 M/S

OPERATIONAL ARCHIVE MEANS. AUGUST 1987
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
VALID AT 0Z ON 1/8/1987 DAY 213 DATA TIME 12Z ON 31/8/1987 DAY 243
250 MBS. BETWEEN LONGS. 120 E - 120 W



→ REPRESENTS 40 M/S

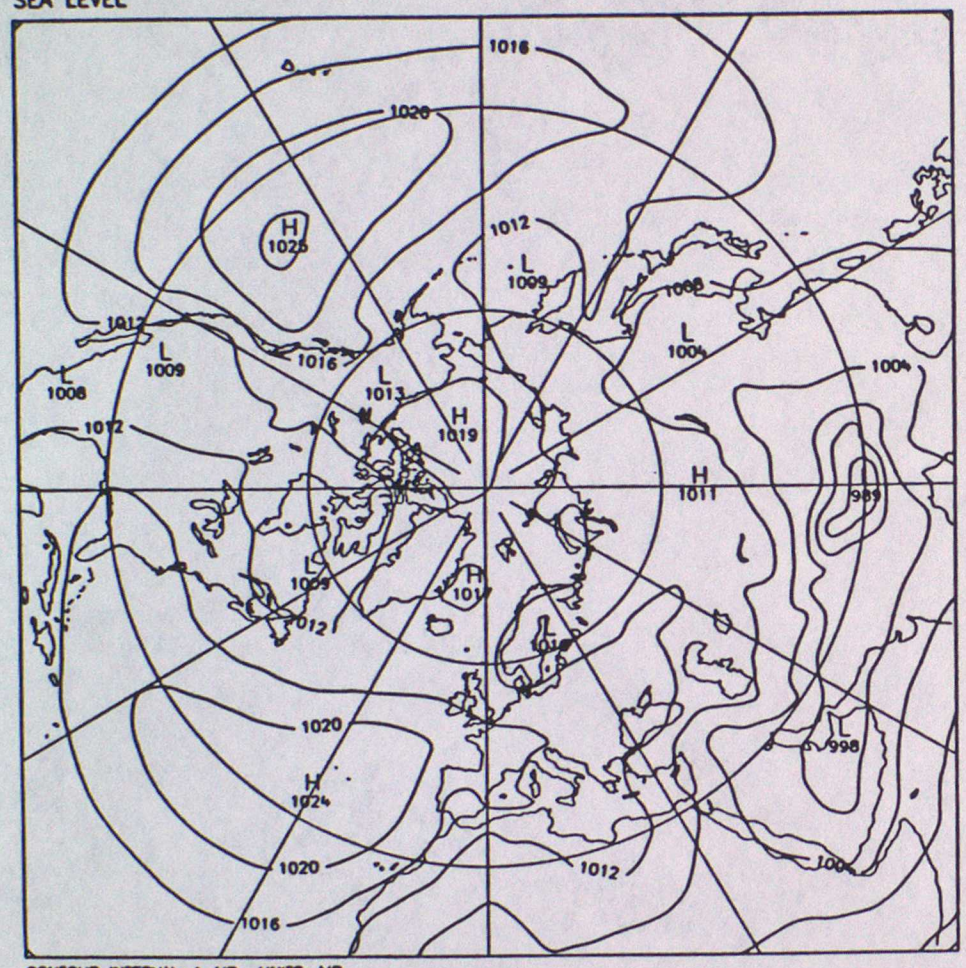
OPERATIONAL ARCHIVE MEANS. AUGUST 1987
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
VALID AT 0Z ON 1/8/1987 DAY 213 DATA TIME 12Z ON 31/8/1987 DAY 243
250 MBS. BETWEEN LONGS. 120 W - 0 W



→ REPRESENTS 40 M/S

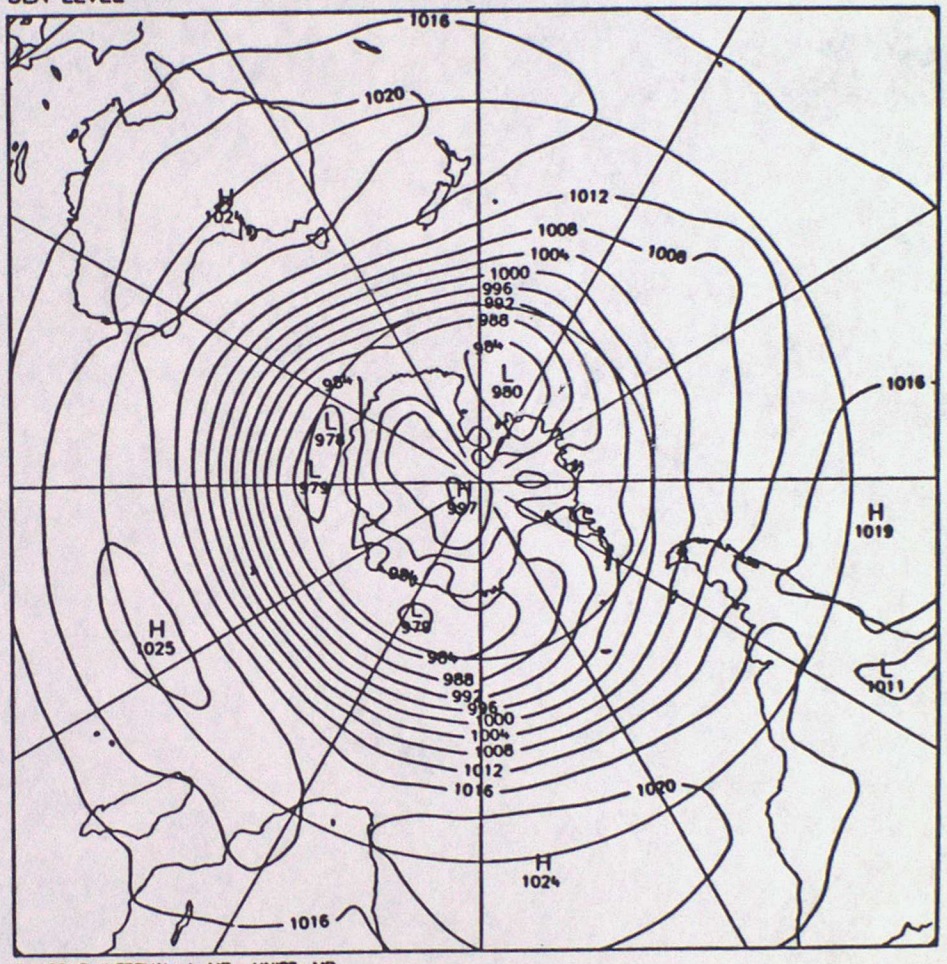
JUNE/JULY/AUGUST
1987

OPERATIONAL ARCHIVE MEANS. JUN/JUL/AUG1987
PMSL
VALID AT 0Z ON 1/6/1987 DAY 152 DATA TIME 12Z ON 31/8/1987 DAY 243
SEA LEVEL



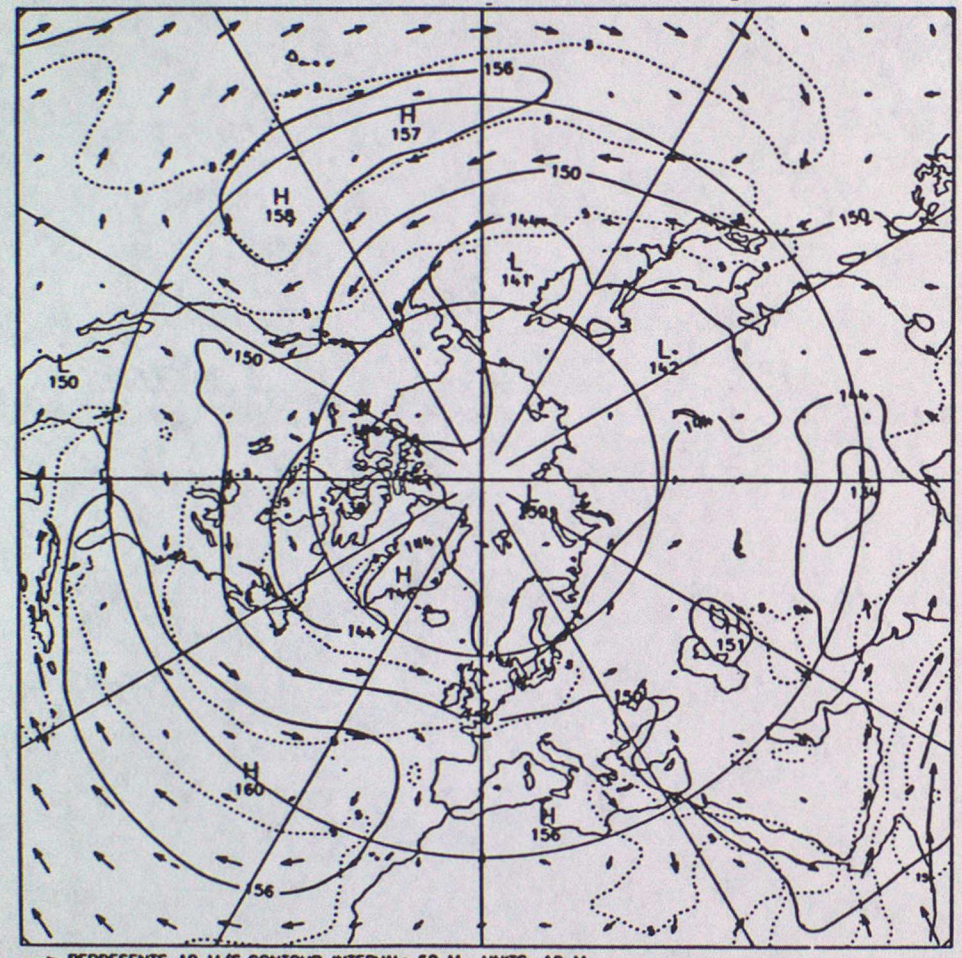
CONTOUR INTERVAL: 4 MB UNITS: MB

OPERATIONAL ARCHIVE MEANS. JUN/JUL/AUG1987
PMSL
VALID AT 0Z ON 1/6/1987 DAY 152 DATA TIME 12Z ON 31/8/1987 DAY 243
SEA LEVEL



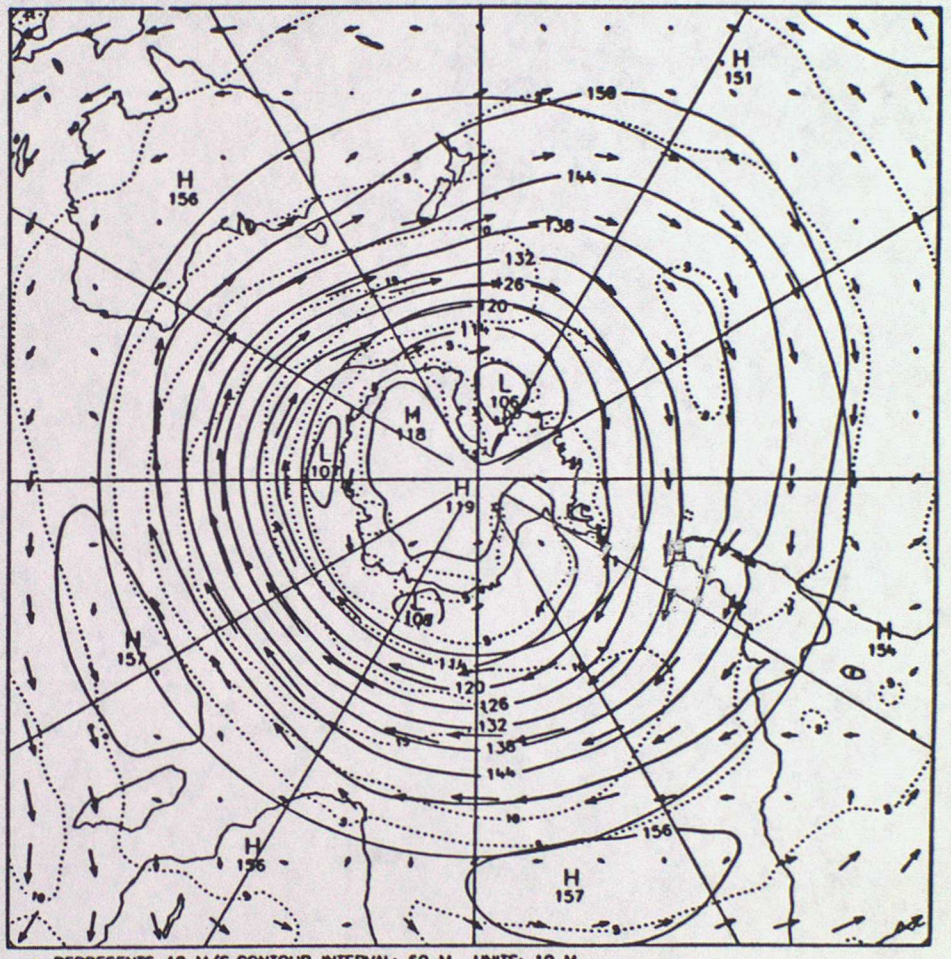
CONTOUR INTERVAL: 4 MB UNITS: MB

OPERATIONAL ARCHIVE MEANS. JUN/JUL/AUG1987
HEIGHTS, WIND ARROWS AND ISOTACHS.
VALID AT 0Z ON 1/6/1987 DAY 152 DATA TIME 12Z ON 31/8/1987 DAY 243
LEVEL: 850 MB



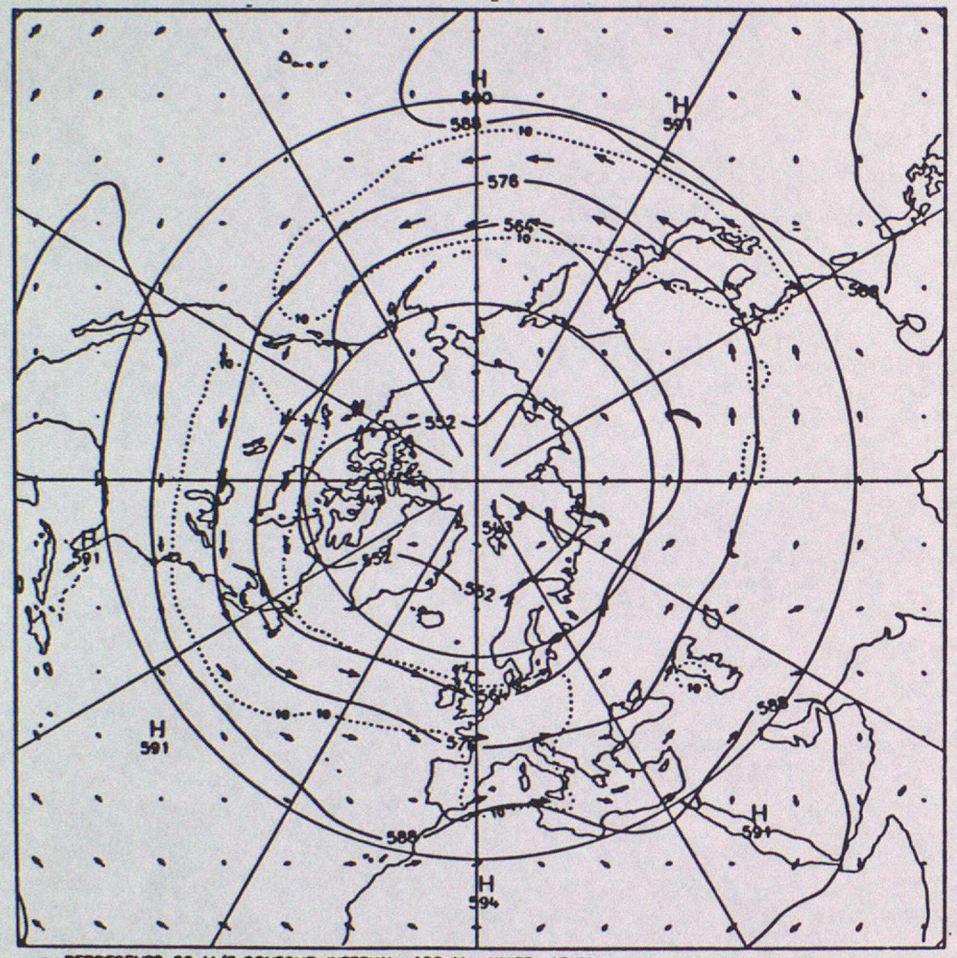
→ REPRESENTS 10 M/S CONTOUR INTERVAL: 60 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. JUN/JUL/AUG1987
HEIGHTS, WIND ARROWS AND ISOTACHS.
VALID AT 0Z ON 1/6/1987 DAY 152 DATA TIME 12Z ON 31/8/1987 DAY 243
LEVEL: 850 MB



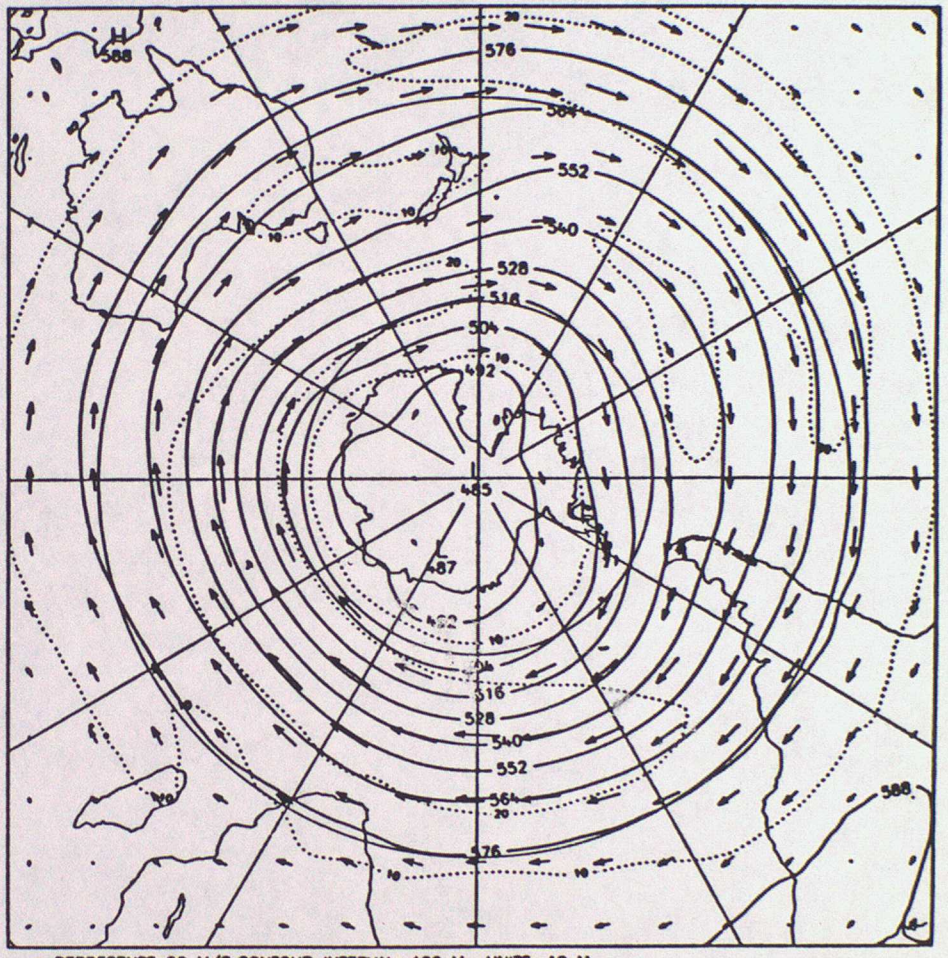
→ REPRESENTS 10 M/S CONTOUR INTERVAL: 60 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. JUN/JUL/AUG1987
HEIGHTS, WIND ARROWS AND ISOTACHS.
VALID AT 0Z ON 1/6/1987 DAY 152 DATA TIME 12Z ON 31/8/1987 DAY 243
LEVEL: 500 MB



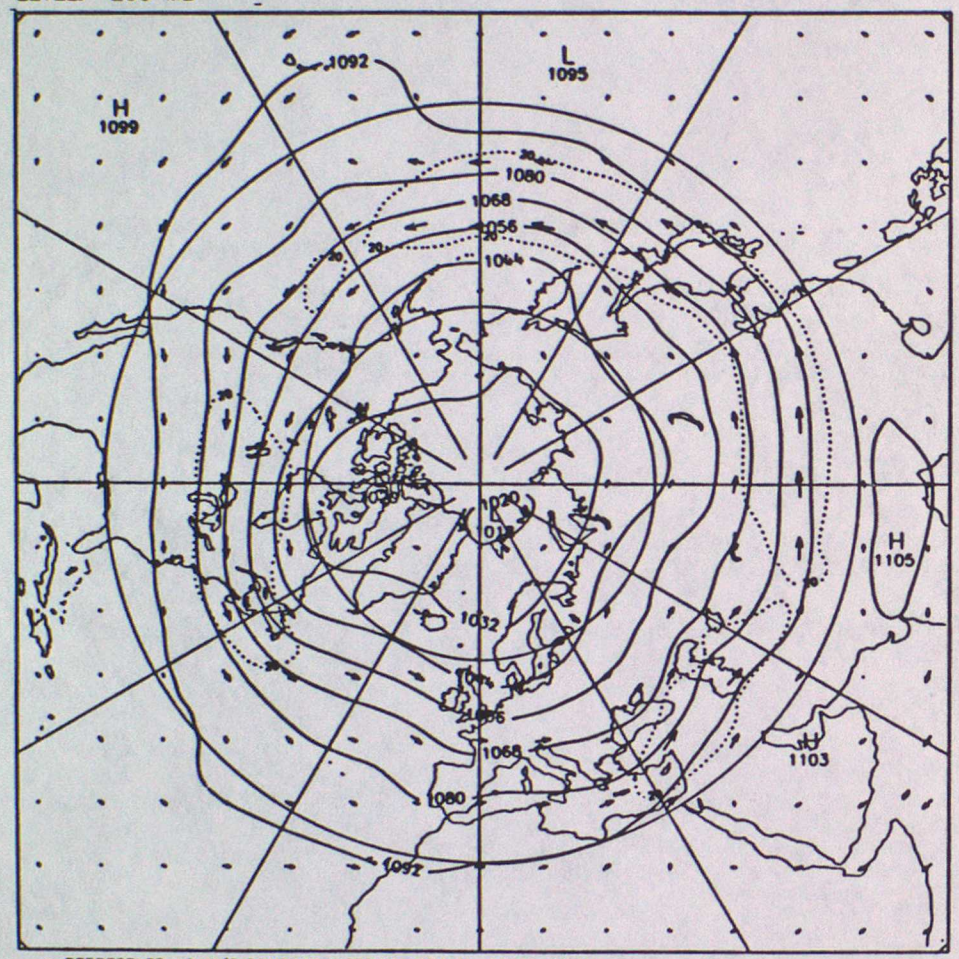
→ REPRESENTS 20 M/S CONTOUR INTERVAL: 120 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. JUN/JUL/AUG1987
HEIGHTS, WIND ARROWS AND ISOTACHS.
VALID AT 0Z ON 1/6/1987 DAY 152 DATA TIME 12Z ON 31/8/1987 DAY 243
LEVEL: 500 MB



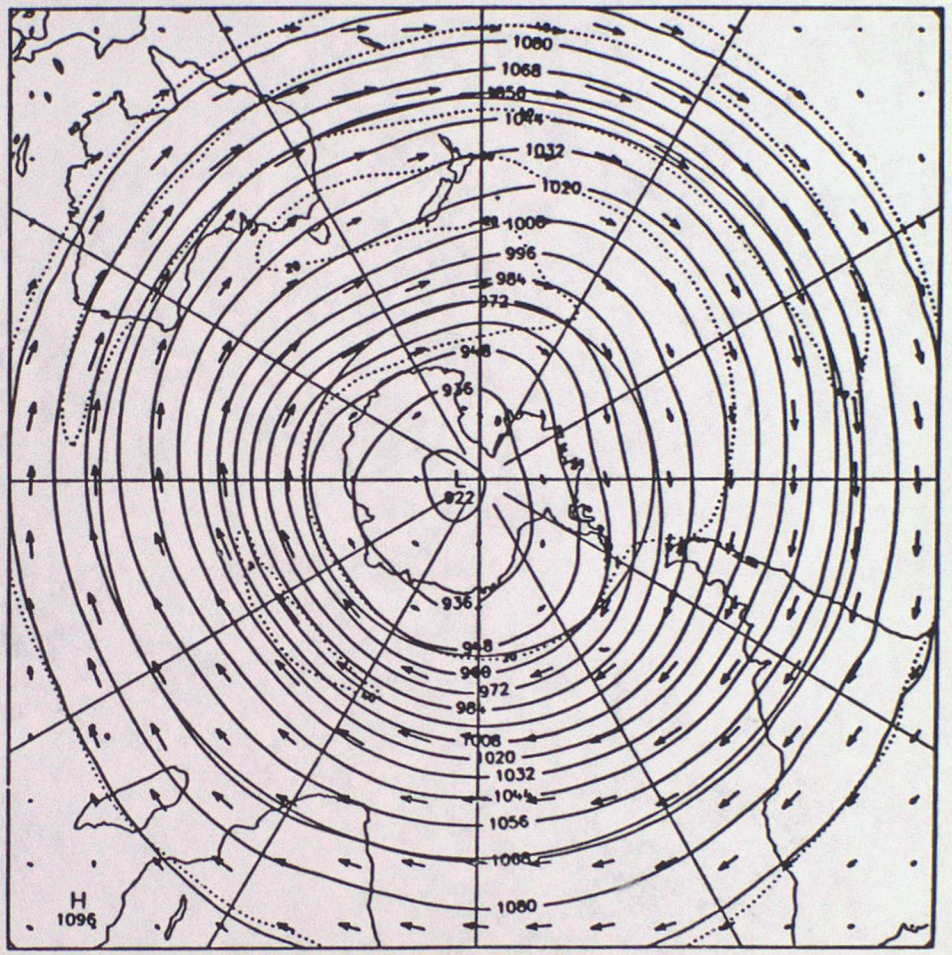
→ REPRESENTS 20 M/S CONTOUR INTERVAL: 120 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. JUN/JUL/AUG1987
HEIGHTS, WIND ARROWS AND ISOTACHS.
VALID AT 0Z ON 1/6/1987 DAY 152 DATA TIME 12Z ON 31/8/1987 DAY 243
LEVEL: 250 MB



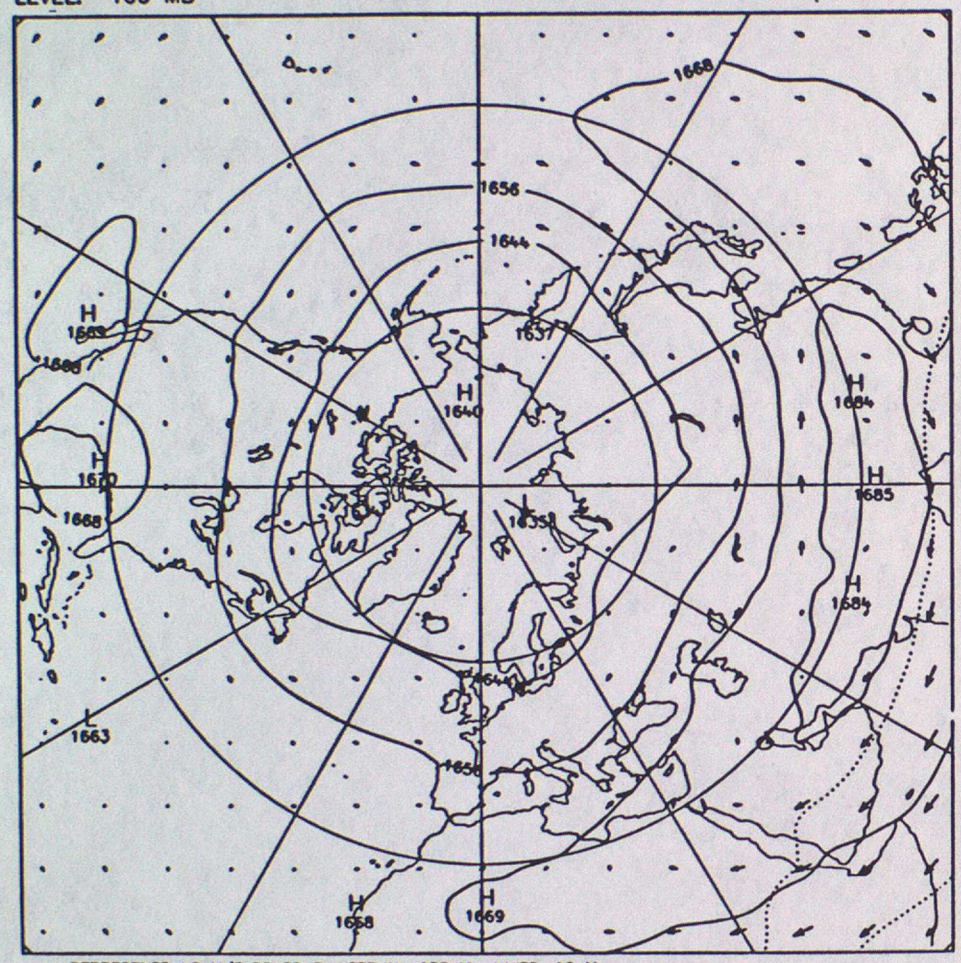
REPRESENTS 40 M/S CONTOUR INTERVAL: 120 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. JUN/JUL/AUG1987
HEIGHTS, WIND ARROWS AND ISOTACHS.
VALID AT 0Z ON 1/6/1987 DAY 152 DATA TIME 12Z ON 31/8/1987 DAY 243
LEVEL: 250 MB



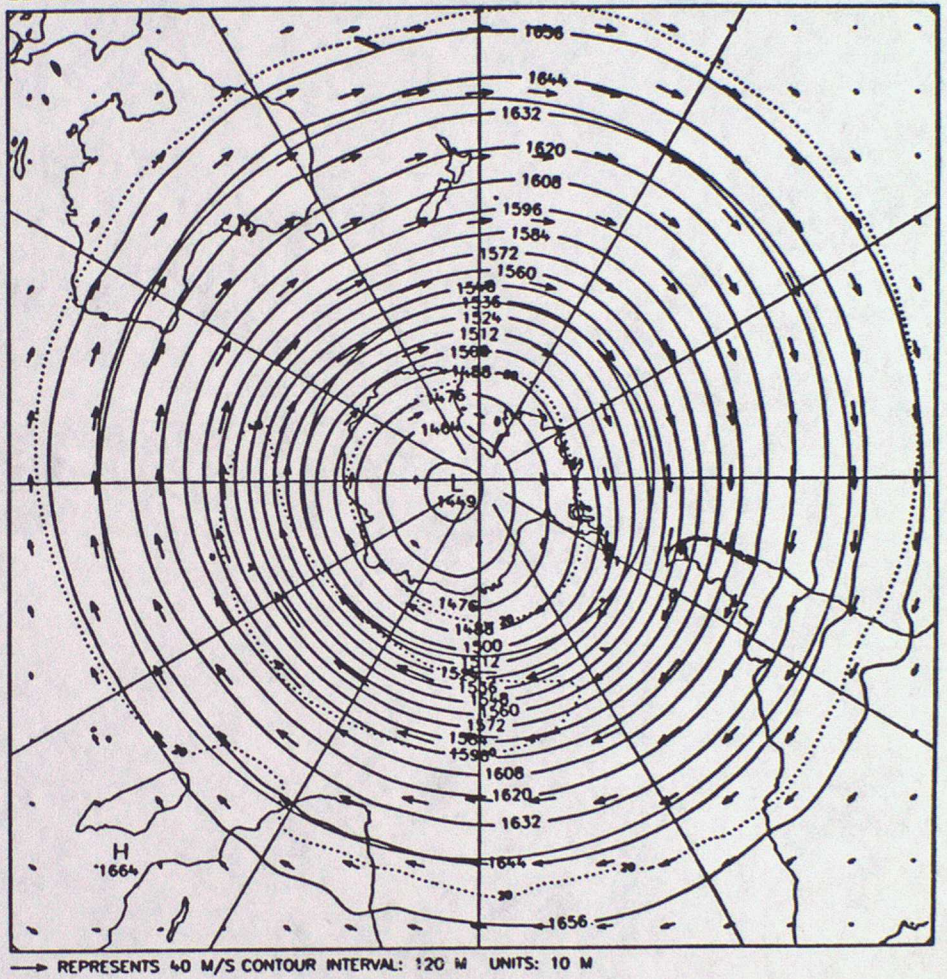
REPRESENTS 40 M/S CONTOUR INTERVAL: 120 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. JUN/JUL/AUG1987
HEIGHTS, WIND ARROWS AND ISOTACHS.
VALID AT 0Z ON 1/6/1987 DAY 152 DATA TIME 12Z ON 31/8/1987 DAY 243
LEVEL: 100 MB



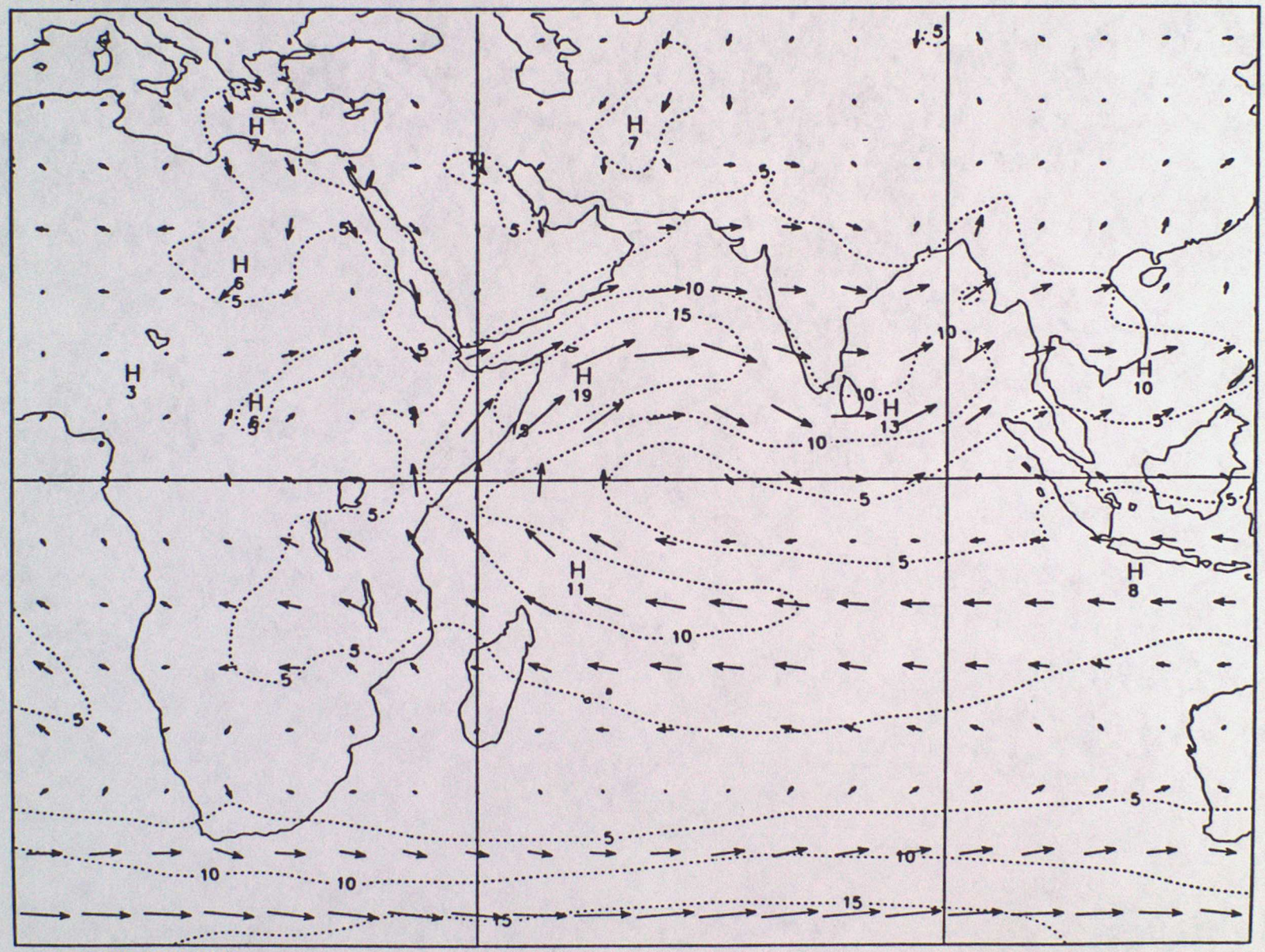
→ REPRESENTS 40 M/S CONTOUR INTERVAL: 120 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. JUN/JUL/AUG1987
HEIGHTS, WIND ARROWS AND ISOTACHS.
VALID AT 0Z ON 1/6/1987 DAY 152 DATA TIME 12Z ON 31/8/1987 DAY 243
LEVEL: 100 MB



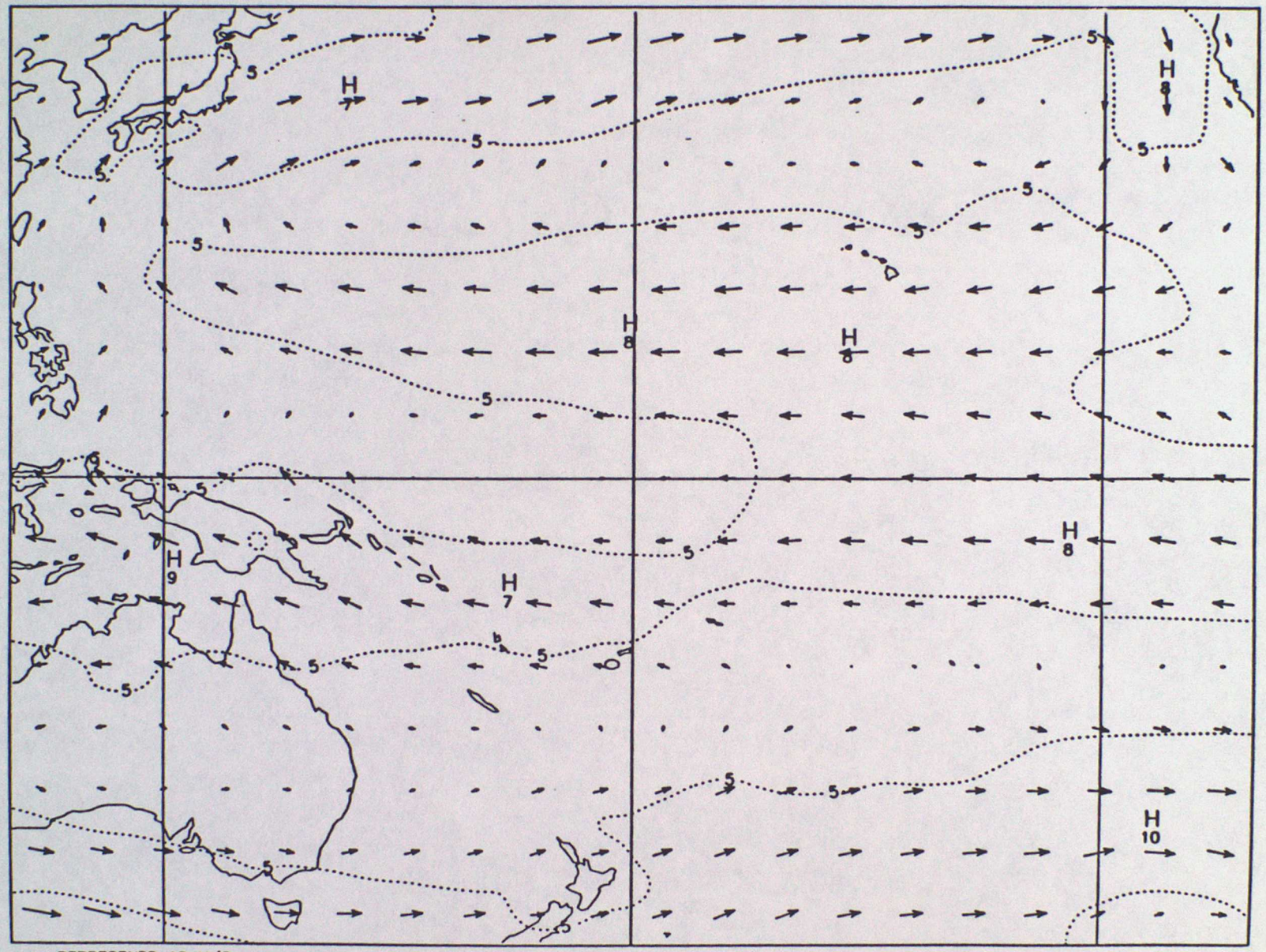
→ REPRESENTS 40 M/S CONTOUR INTERVAL: 120 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. JUN/JUL/AUG1987
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
VALID AT 0Z ON 1/6/1987 DAY 152 DATA TIME 12Z ON 31/8/1987 DAY 243
850 MBS. BETWEEN LONGS. 0 E - 120 E



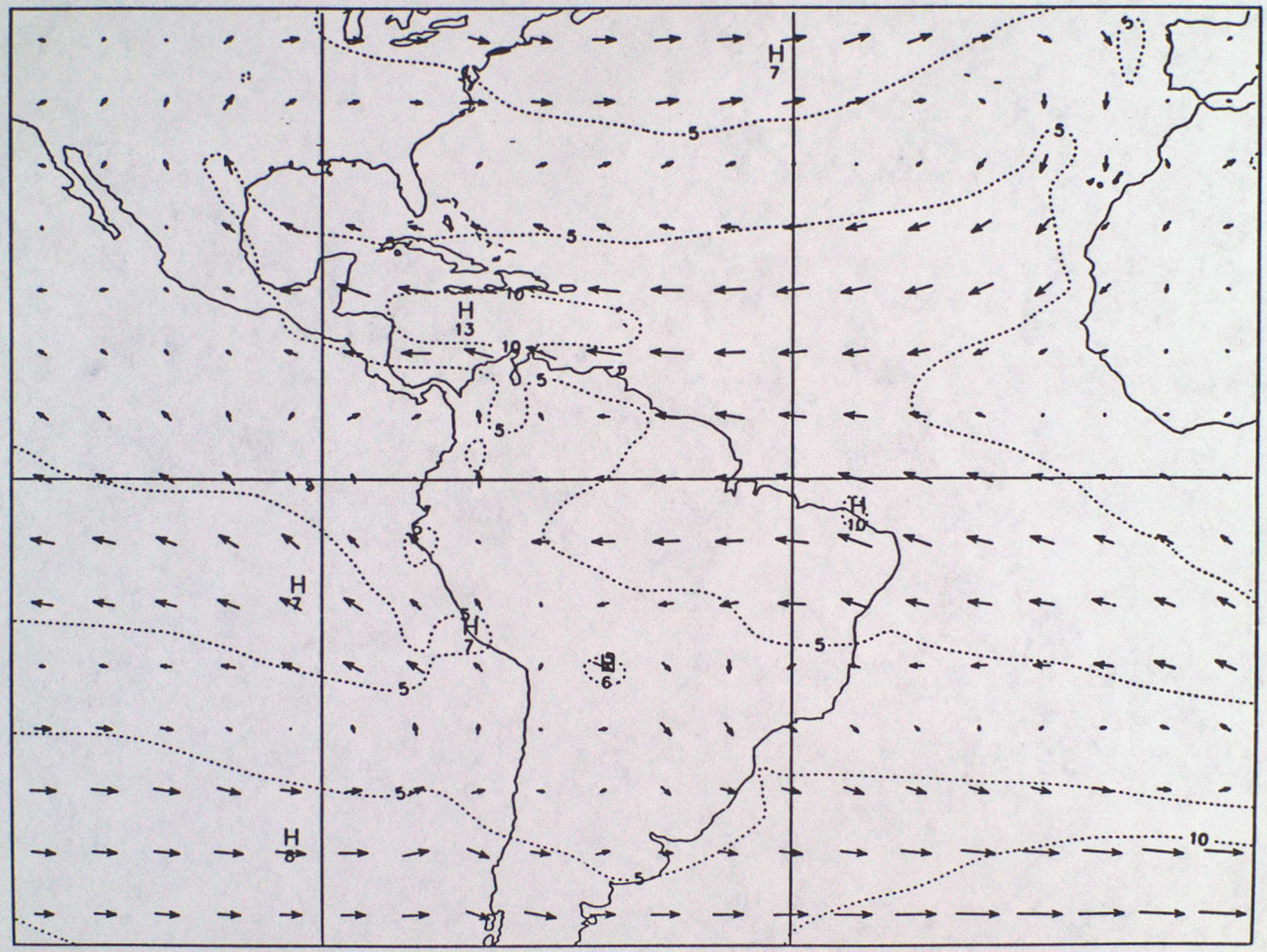
→ REPRESENTS 10 M/S

OPERATIONAL ARCHIVE MEANS. JUN/JUL/AUG1987
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
VALID AT 0Z ON 1/6/1987 DAY 152 DATA TIME 12Z ON 31/8/1987 DAY 243
850 MBS. BETWEEN LONGS. 120 E - 120 W



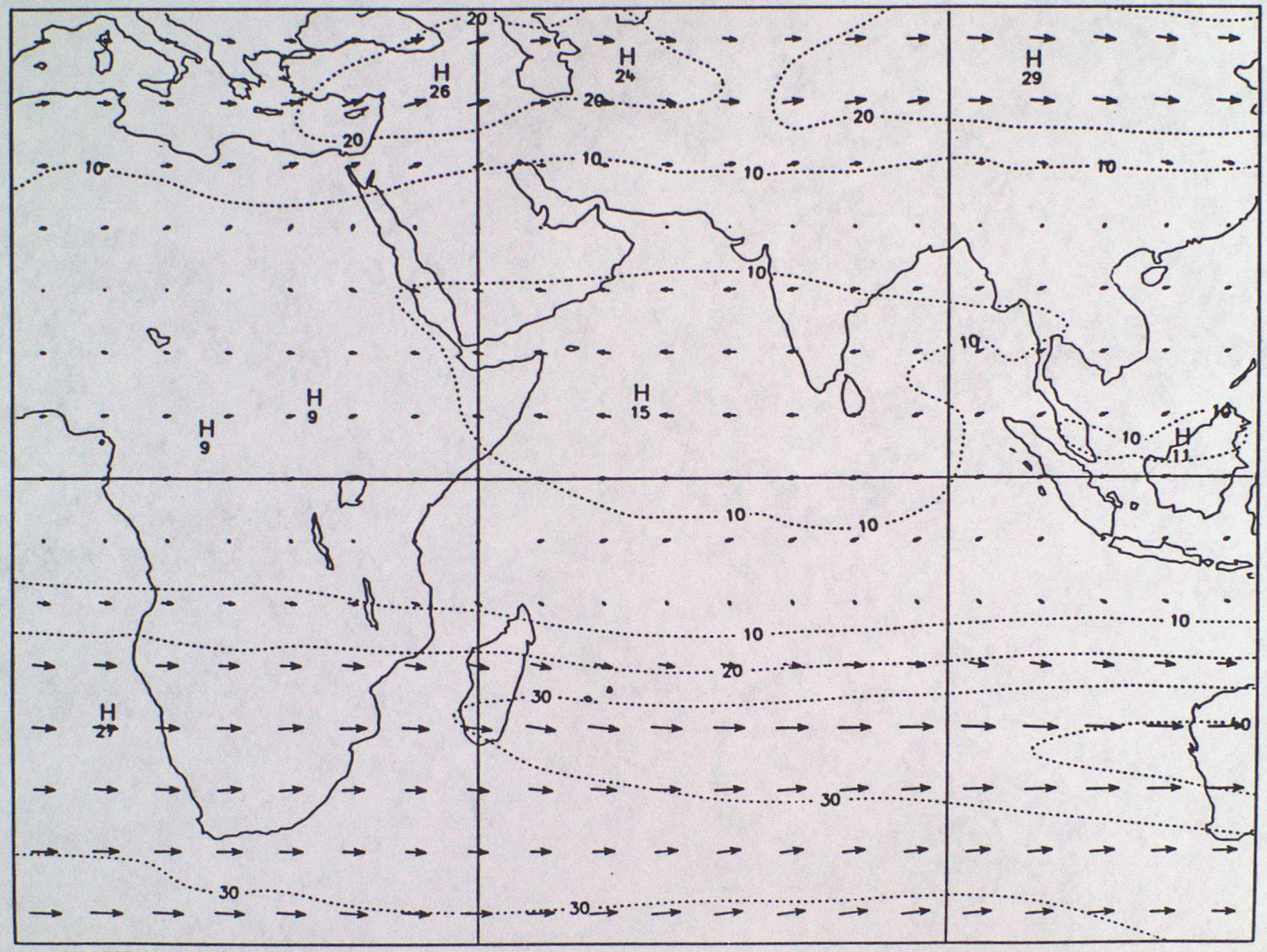
→ REPRESENTS 10 M/S

OPERATIONAL ARCHIVE MEANS. JUN/JUL/AUG1987
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
VALID AT 0Z ON 1/6/1987 DAY 152 DATA TIME 12Z ON 31/8/1987 DAY 243
850 MBS. BETWEEN LONGS. 120 W - 0 W



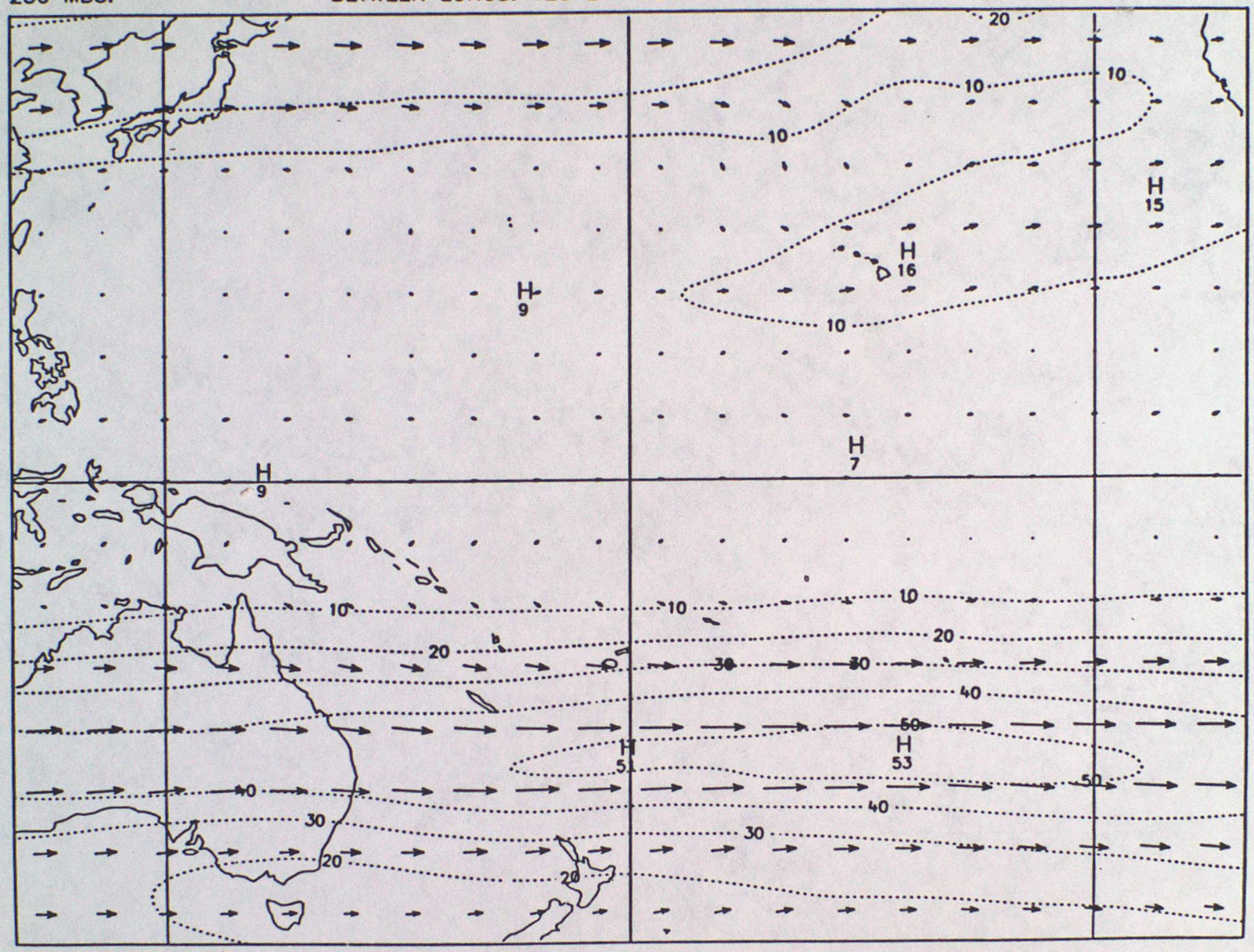
→ REPRESENTS 10 M/S

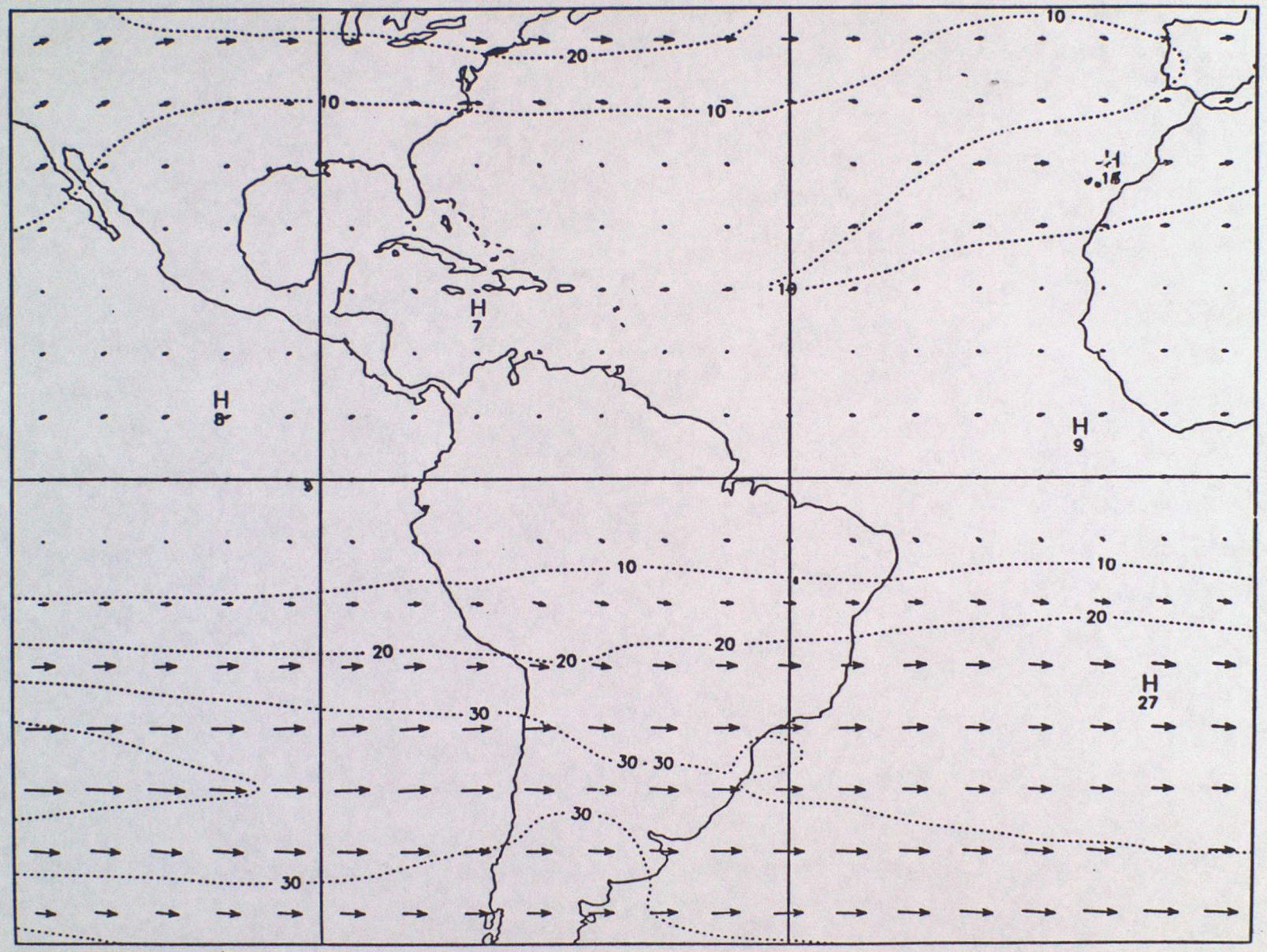
OPERATIONAL ARCHIVE MEANS. JUN/JUL/AUG1987
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
VALID AT 0Z ON 1/6/1987 DAY 152 DATA TIME 12Z ON 31/8/1987 DAY 243
250 MBS. BETWEEN LONGS. 0 E - 120 E



→ REPRESENTS 40 M/S

OPERATIONAL ARCHIVE MEANS. JUN/JUL/AUG1987
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
VALID AT 0Z ON 1/6/1987 DAY 152 DATA TIME 12Z ON 31/8/1987 DAY 243
250 MBS. BETWEEN LONGS. 120 E - 120 W



→ REPRESENTS 40 M/S

OPERATIONAL ARCHIVE MEANS. JUN/JUL/AUG1987
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
VALID AT 0Z ON 1/6/1987 DAY 152 DATA TIME 12Z ON 31/8/1987 DAY 243
250 MBS. BETWEEN LONGS. 120 W - 0 W.