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**A CATALOGUE OF 50 kPa SEASONAL HEIGHT
ANOMALIES FOR THE NORTHERN HEMISPHERE
USING 1961-90 NORMALS**

**CATALOGUE DES ANOMALIES SAISONNIÈRES
À LA 50 kPa POUR L'HÉMISPHÈRE NORD
BASÉES SUR LES NORMALES DE 1961-90**

by/par

**Aaron Gergye
Isaac Savdié**

CLI-1-93

**DOWNSVIEW, ONTARIO
1993**

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A Catalogue of 50 kPa Seasonal Height Anomalies For The Northern Hemisphere Using 1961-90 Normals

**Aaron Gergye,
Isaac Savdie,
Canadian Climate Centre.**

Introduction

In 1989, the Climate Monitoring and Prediction Division of the Canadian Climate Centre produced a catalogue of 50 kPa seasonal height anomalies for the period 1946-89. This anomaly catalogue, based upon the 1951-80 normal period, was used only internally within the division.

An updated catalogue, for the 1961-90 climatological normal period, is presented for reference purposes.

The Data Set

Using gridded daily 50 kPa heights for the northern hemisphere, originally obtained from the Canadian Meteorological Centre (CMC), monthly, and subsequently, seasonal averages were calculated for the period January 1946 to May 1993.

These $5^\circ \times 5^\circ$ gridded data consist of 455 points in the northern hemisphere. For the period 1961-90, the seasonal anomalies for each grid point were computed by subtracting the corresponding normal from the observed 50 kPa height. Contouring was done at 2 decametre intervals. The seasonal anomaly maps are displayed on a Polar Stereographic Projection.

The seasons are defined as follows:

Winter: December to February
Spring: March to May
Summer: June to August
Fall: September to November

This catalogue will serve as a basis for the development of an automated pattern recognition scheme, which could be used operationally to objectively find the best seasonal analogue.

Acknowledgement

We would like to thank Krystyna Czaja for assisting in the preparation of this catalogue.

Catalogue des anomalies saisonnières à la 50 kPA pour l'hémisphère nord basées sur les normales de 1961-90.

Aaron Gergye

Isaac Savdié

Centre climatologique canadien

Introduction

En 1989, la Division de la prévision et de l'information en temps réel du Centre climatologique canadien a préparé un catalogue couvrant la période débutant en 1946 et se terminant en 1989 des anomalies saisonnières à la 50 kPA en utilisant les normales basées sur la période 1951-1980. Ce document était destiné à l'usage interne de la division.

On présente dans ce qui suit, pour fin de référence, un catalogue mis à jour, basé sur les normales les plus récentes, notamment celles de 1961-90.

La base des données

On utilise les données de la 50 kPA calculées à des points de grille couvrant l'hémisphère nord, du Centre météorologique canadien. Les valeurs mensuelles, suivies par les moyennes saisonnières ont été calculées pour la période partant de janvier 1946 et se terminant en mai 1993.

Les points de grilles, 455 au total dans l'hémisphère nord, sont formés par des carrés de 5 degrés chaque. Les anomalies saisonnières de la 50 kPA ont été calculées en soustrayant de chaque point de grille sa valeur normale calculée à partir de la période de 1961-90. Les isohypes sont analysés à un intervalle de 2 dam. Les anomalies saisonnières ont été préparées sur des projections stéréographiques polaires.

On a défini les saisons tel que suit:

l'hiver: de décembre à février

le printemps: de mars à mai

l'été: de juin à août

l'automne: de septembre à novembre

Ce catalogue servira dans la mise au point d'un système automatisé d'identification des configurations des anomalies, et pourrait bien être utilisé d'une façon opérationnelle pour déterminer les meilleures analogues.

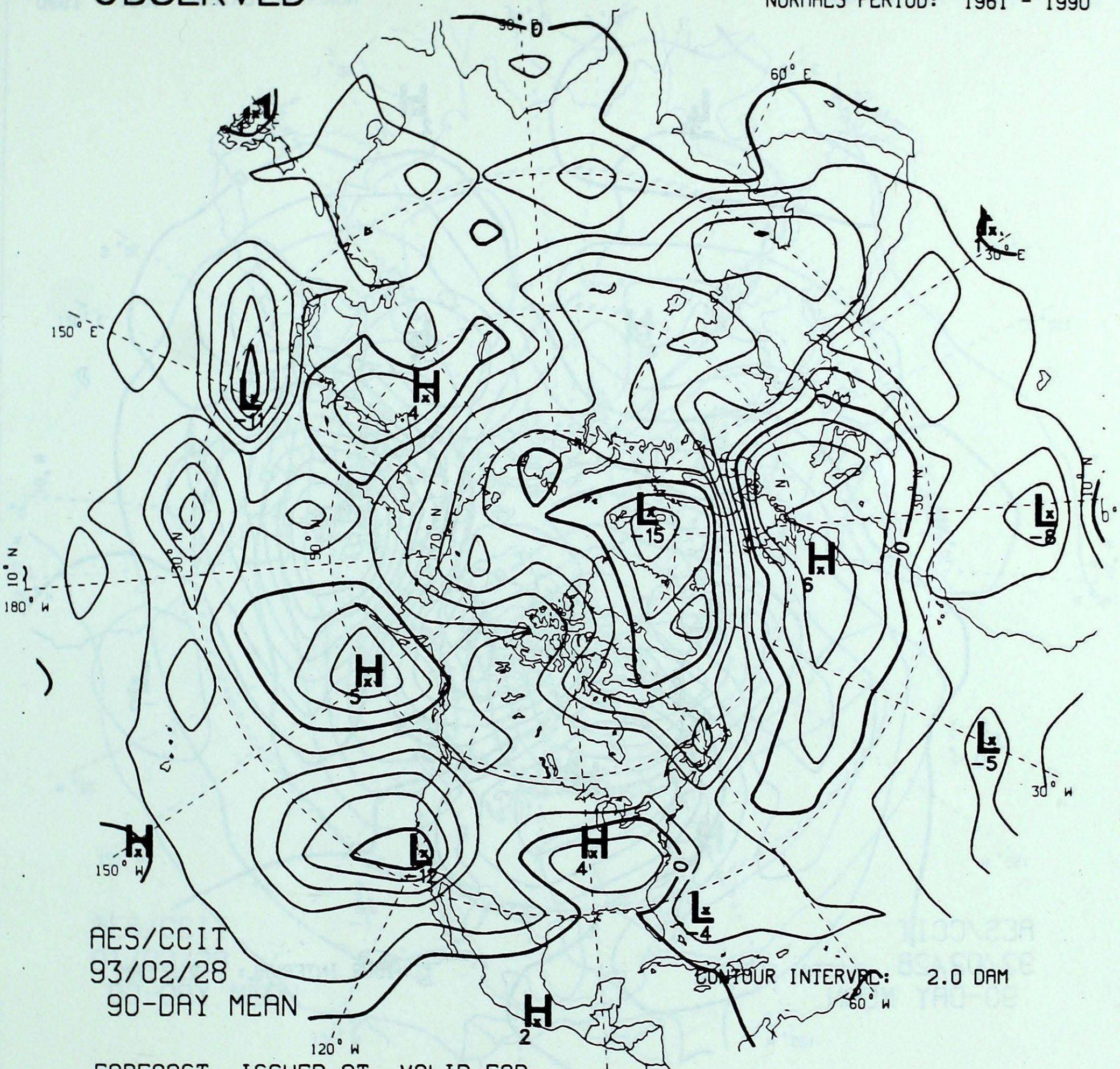
Remerciements

Les auteurs aimeraient remercier Krystyna Czaja pour son aide dans la préparation de ce catalogue.

50 KPA HEIGHT ANOMALY
01 DEC 92 TO 28 FEB 93
90-DAY MEAN

OBSERVED

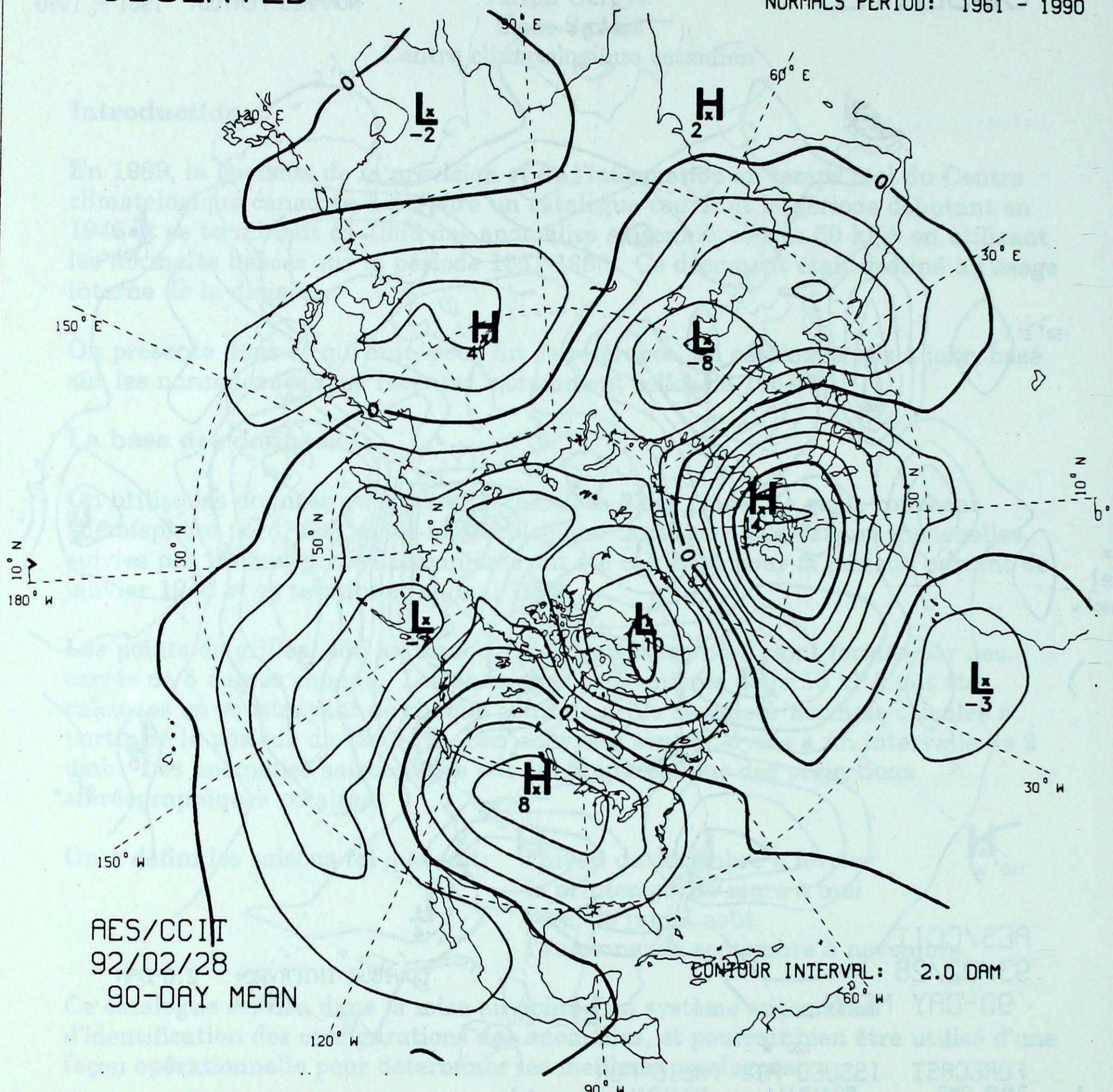
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 91 TO 28 FEB 92
90-DAY MEAN

OBSERVED

NORMALS PERIOD: 1961 - 1990

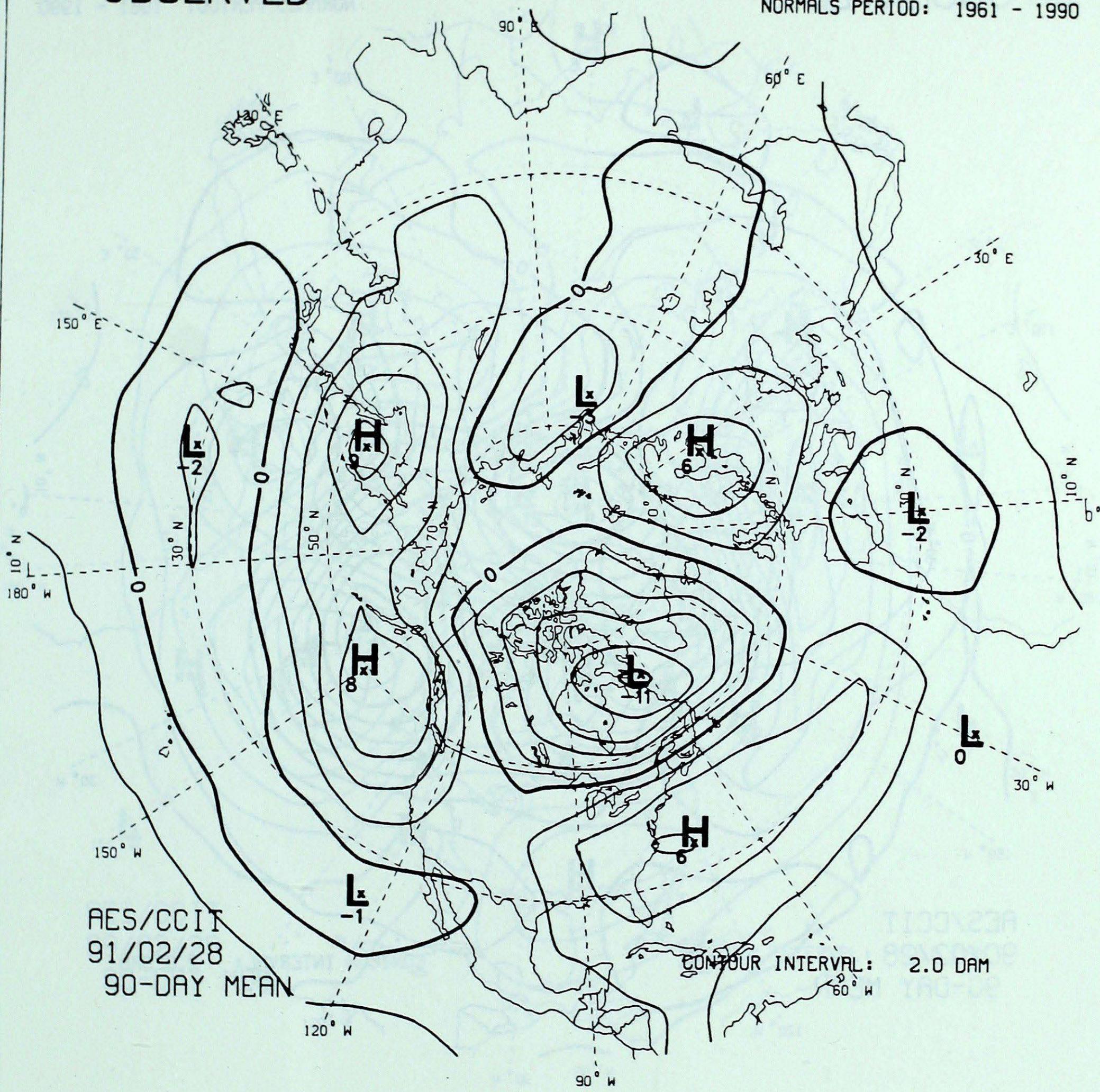


RES/CCIT
92/02/28
90-DAY MEAN

50 KPA HEIGHT ANOMALY
01 DEC 90 TO 28 FEB 91
90-DAY MEAN

OBSERVED

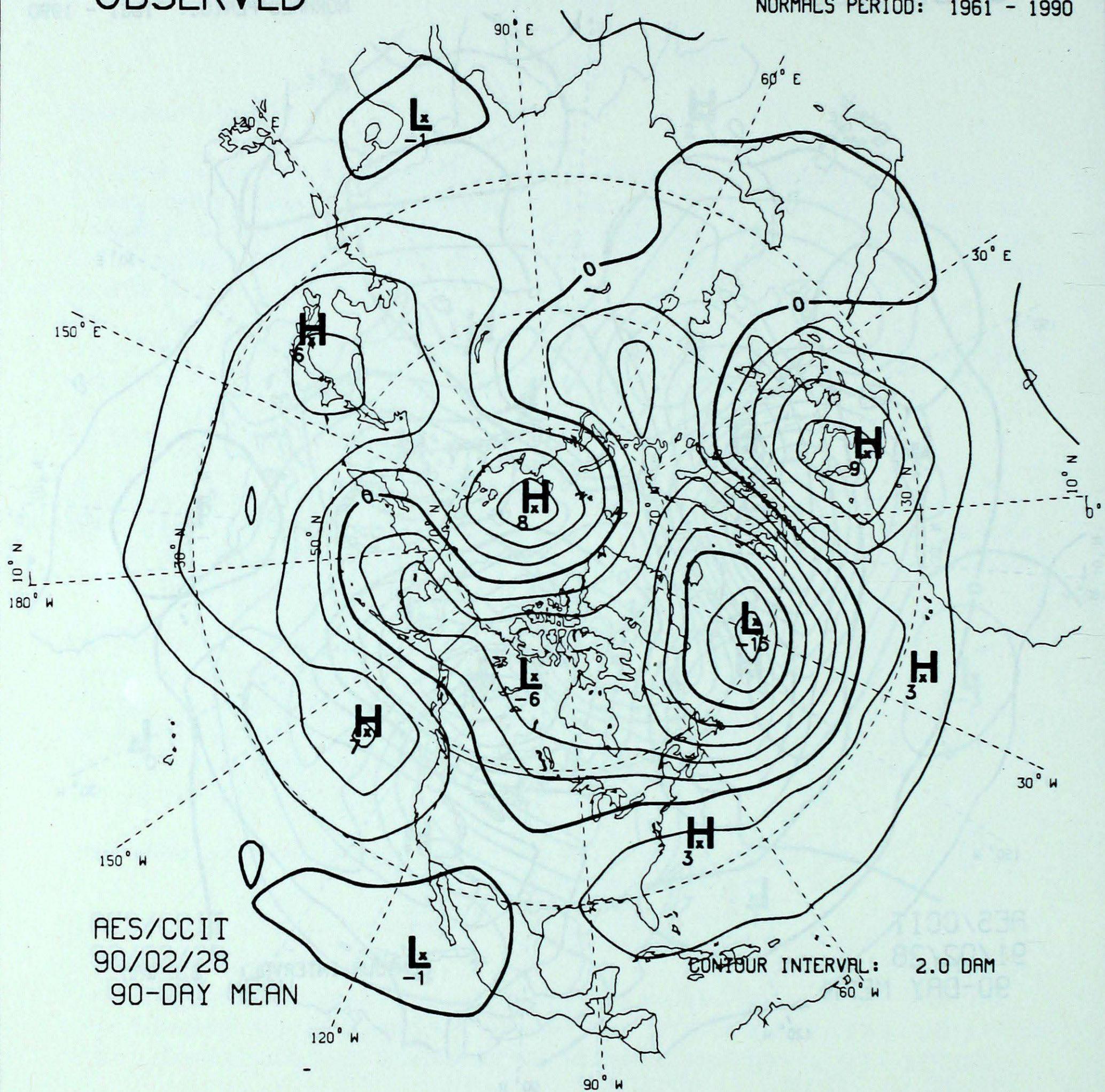
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 89 TO 28 FEB 90
90-DAY MEAN

OBSERVED

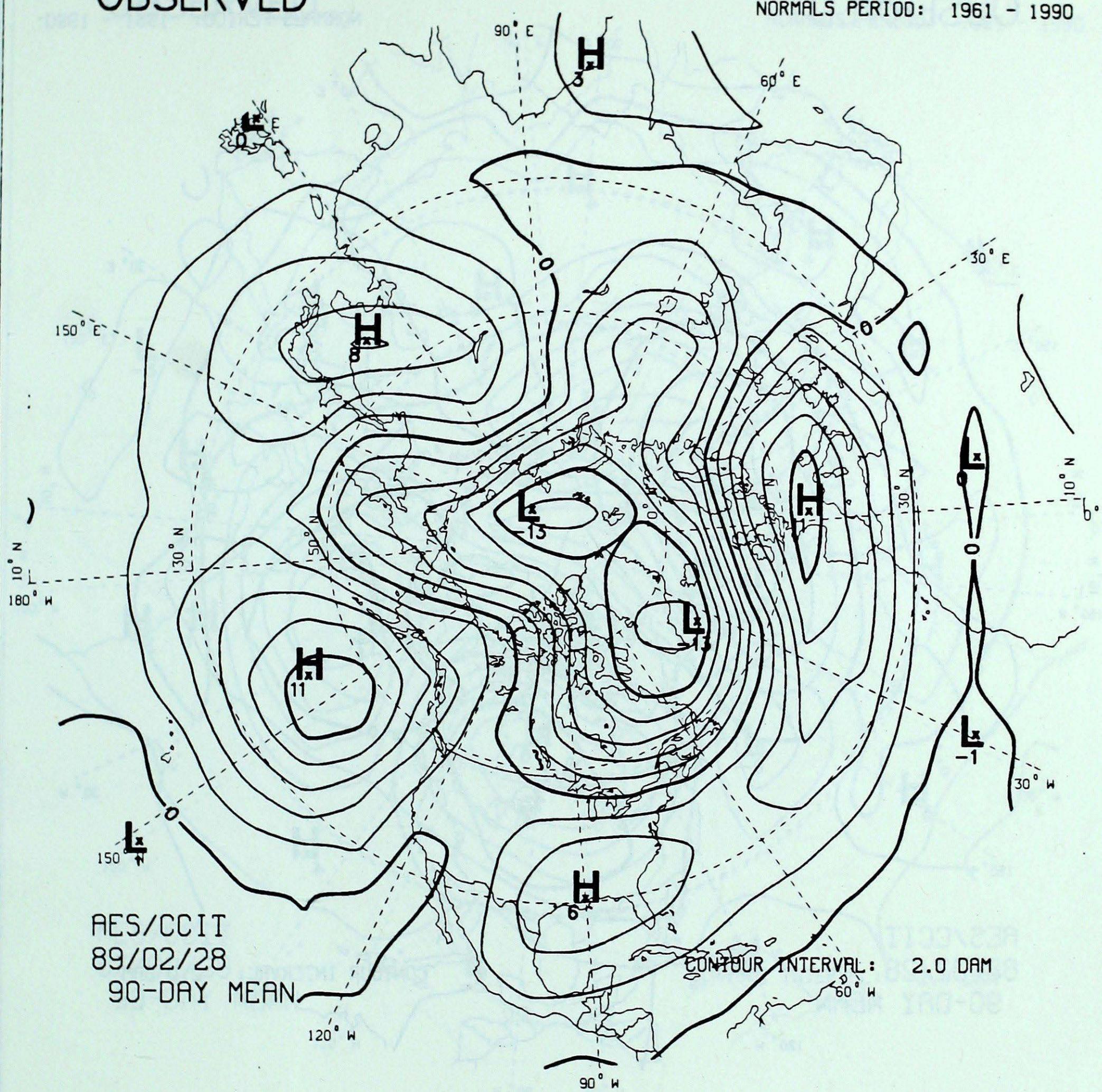
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 88 TO 28 FEB 89
90-DAY MEAN

OBSERVED

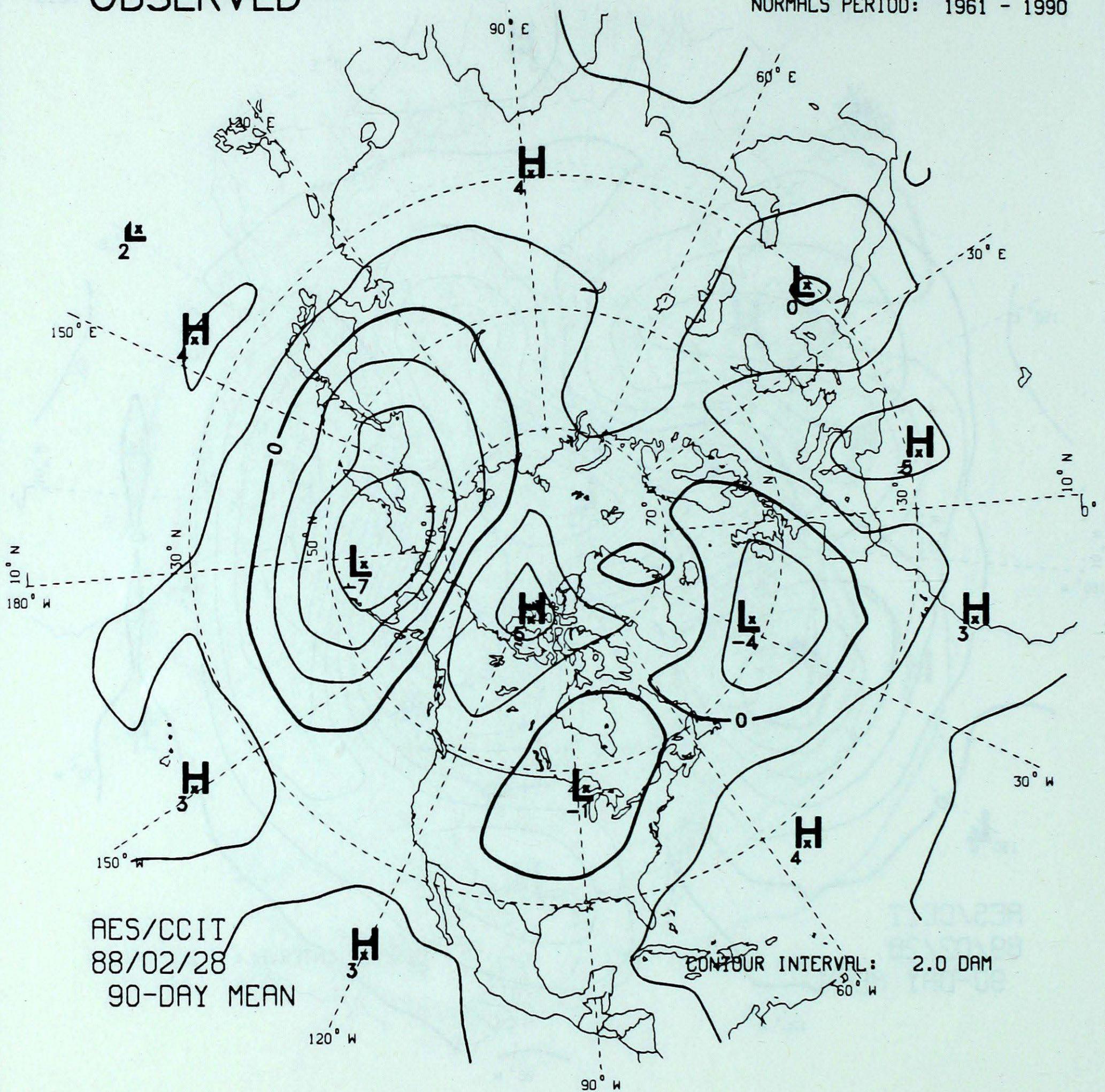
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 87 TO 28 FEB 88
90-DAY MEAN

OBSERVED

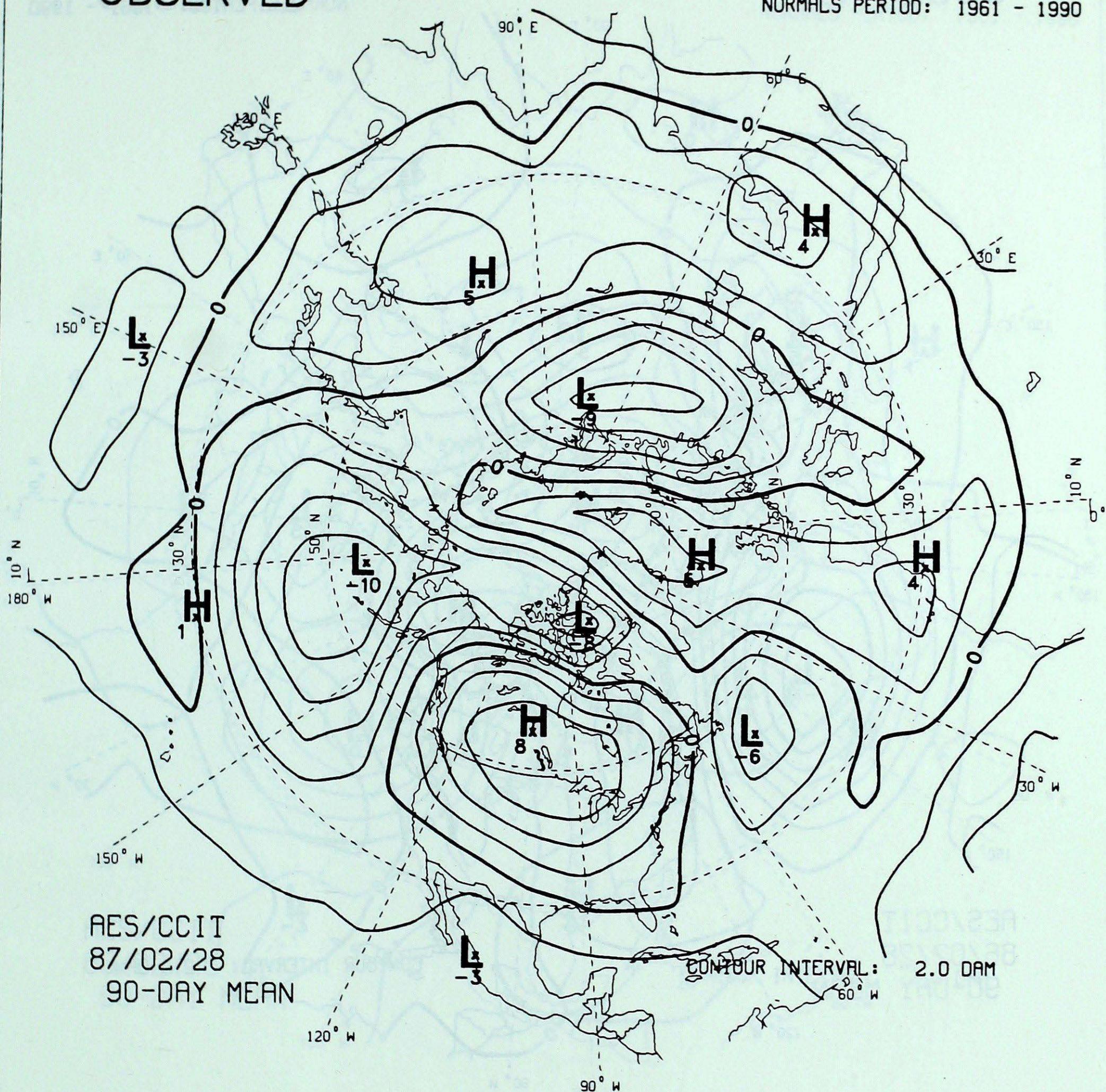
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 86 TO 28 FEB 87
90-DAY MEAN

OBSERVED

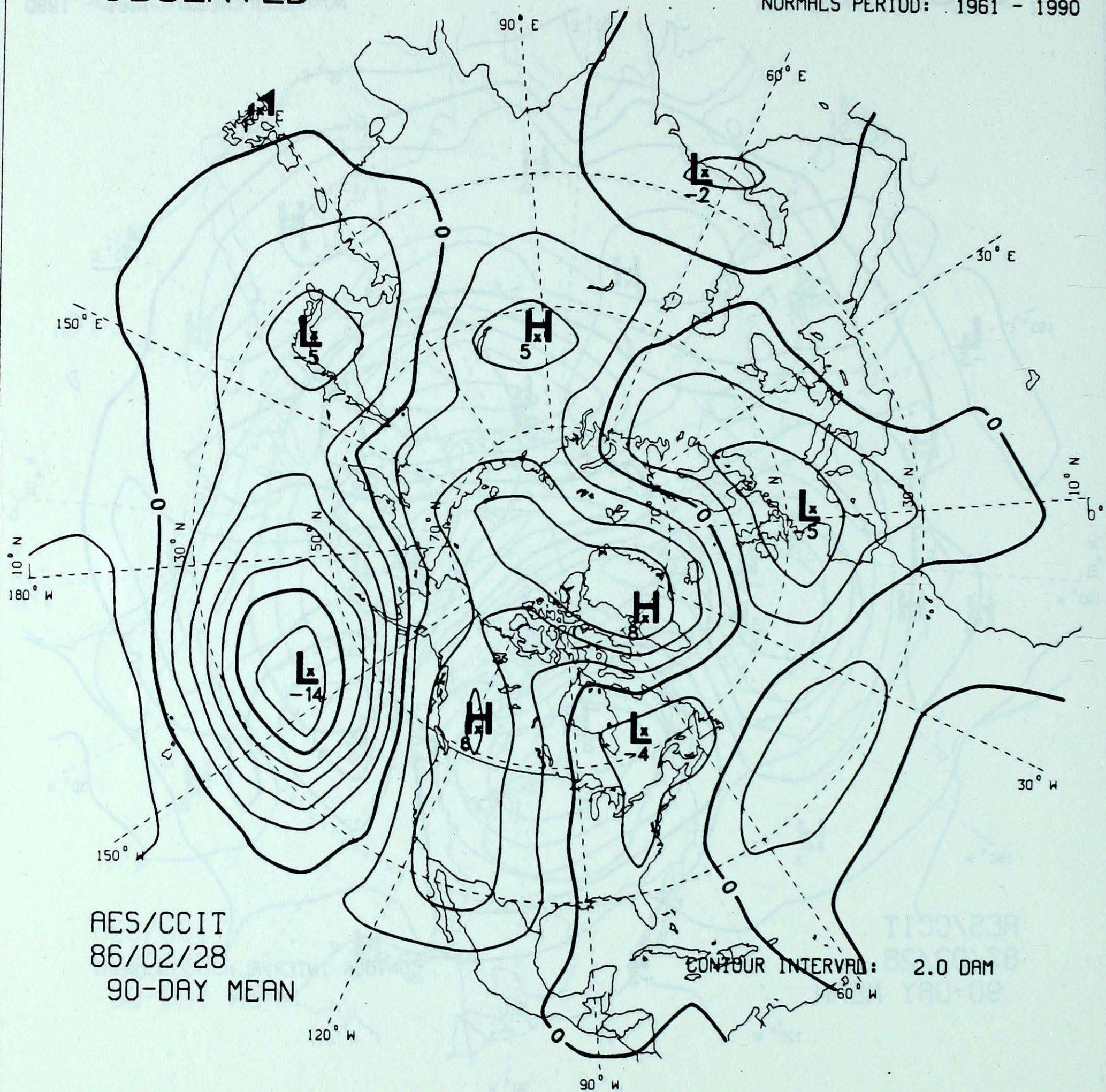
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 85 TO 28 FEB 86
90-DAY MEAN

OBSERVED

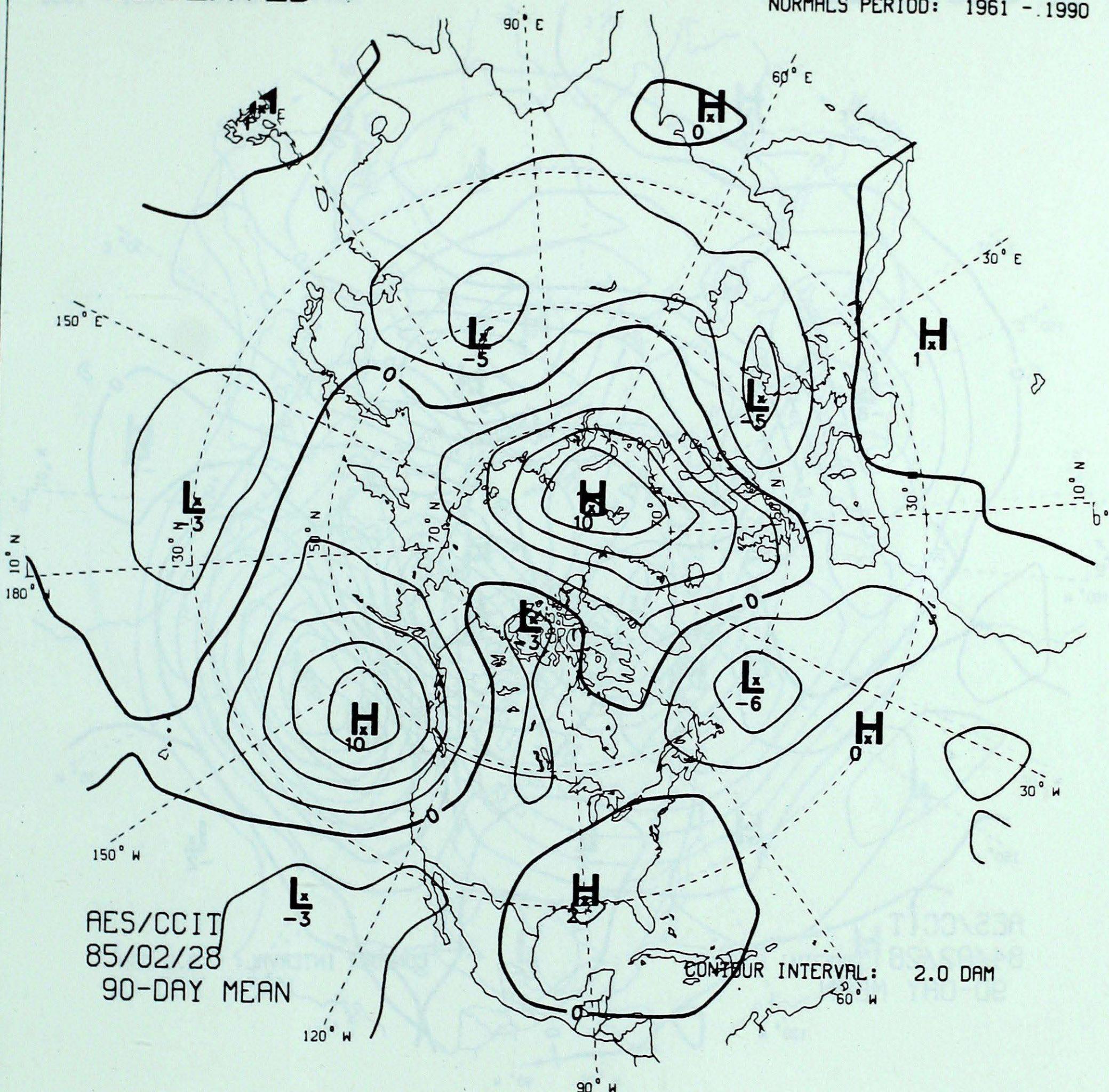
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 84 TO 28 FEB 85
90-DAY MEAN

OBSERVED

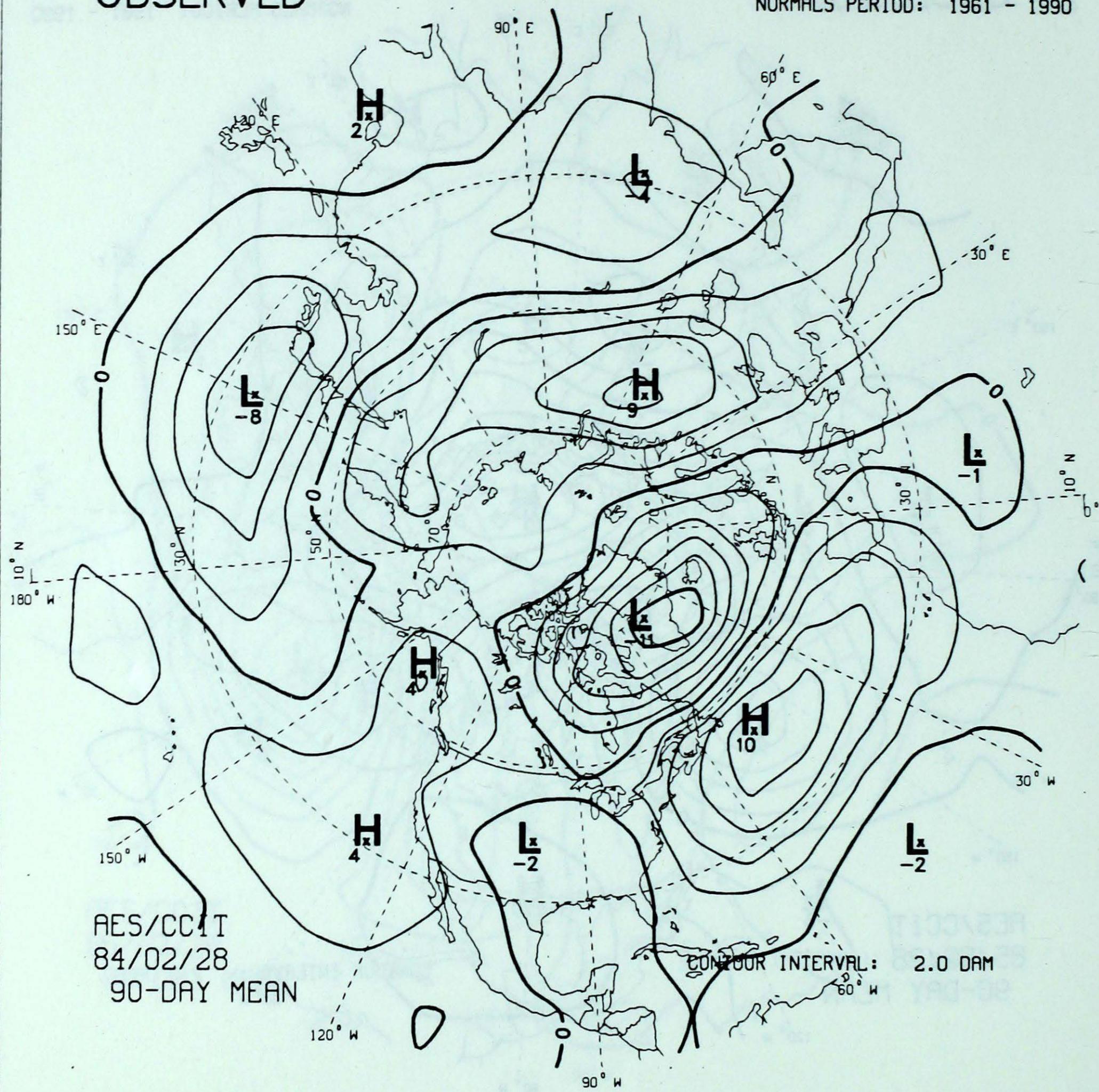
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 83 TO 28 FEB 84
90-DAY MEAN

OBSERVED

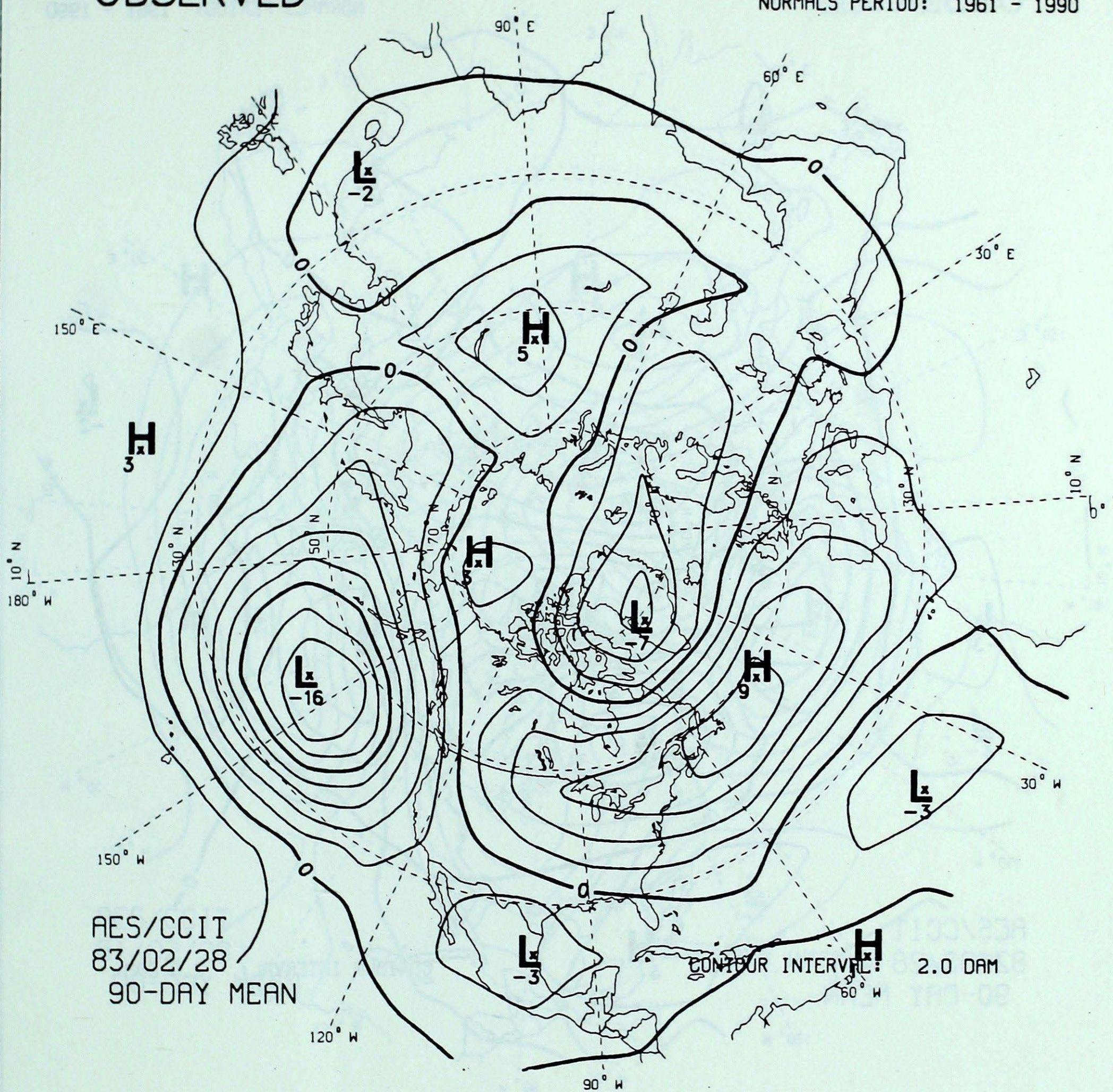
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 82 TO 28 FEB 83
90-DAY MEAN

OBSERVED

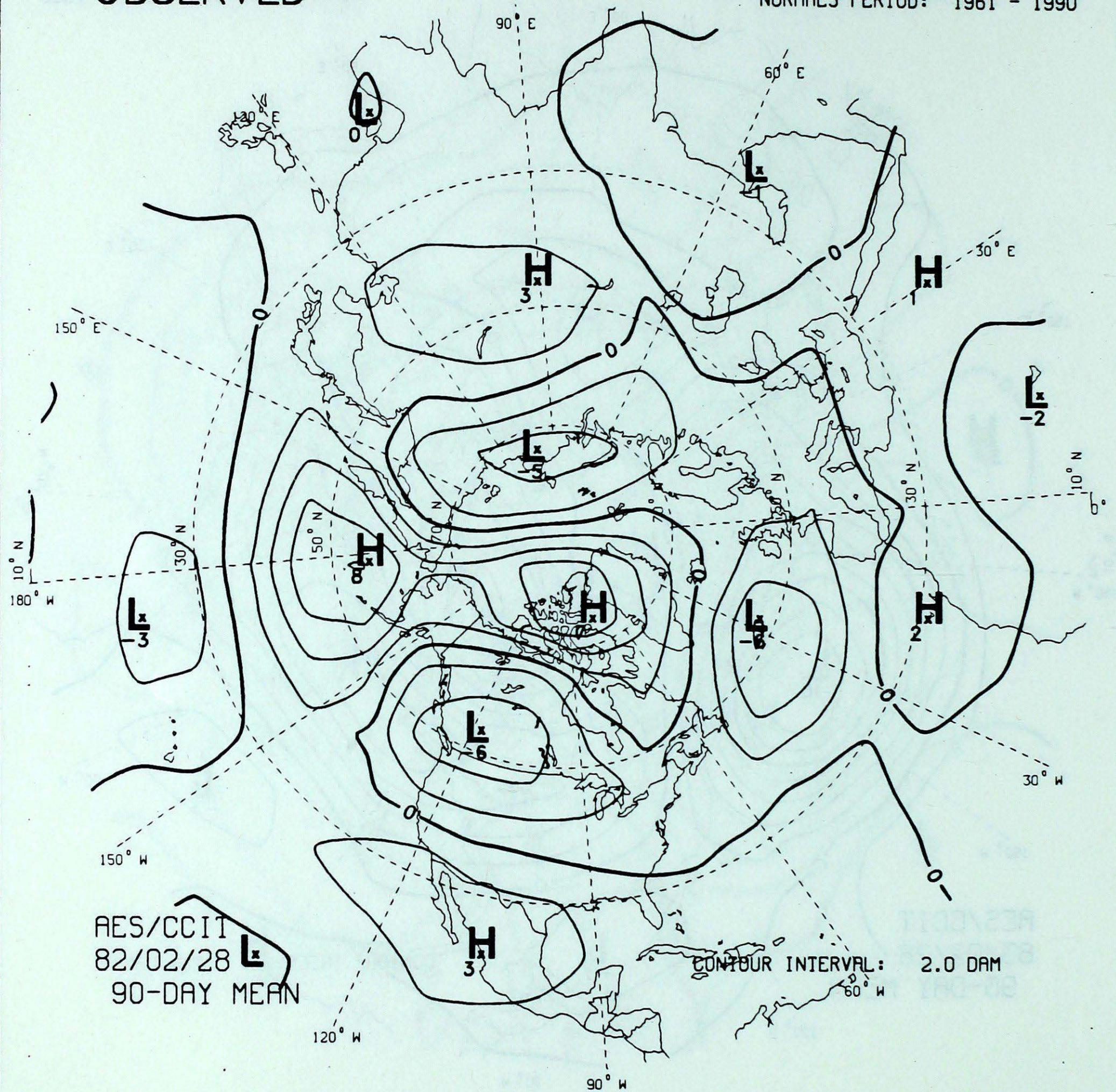
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 81 TO 28 FEB 82
90-DAY MEAN

OBSERVED

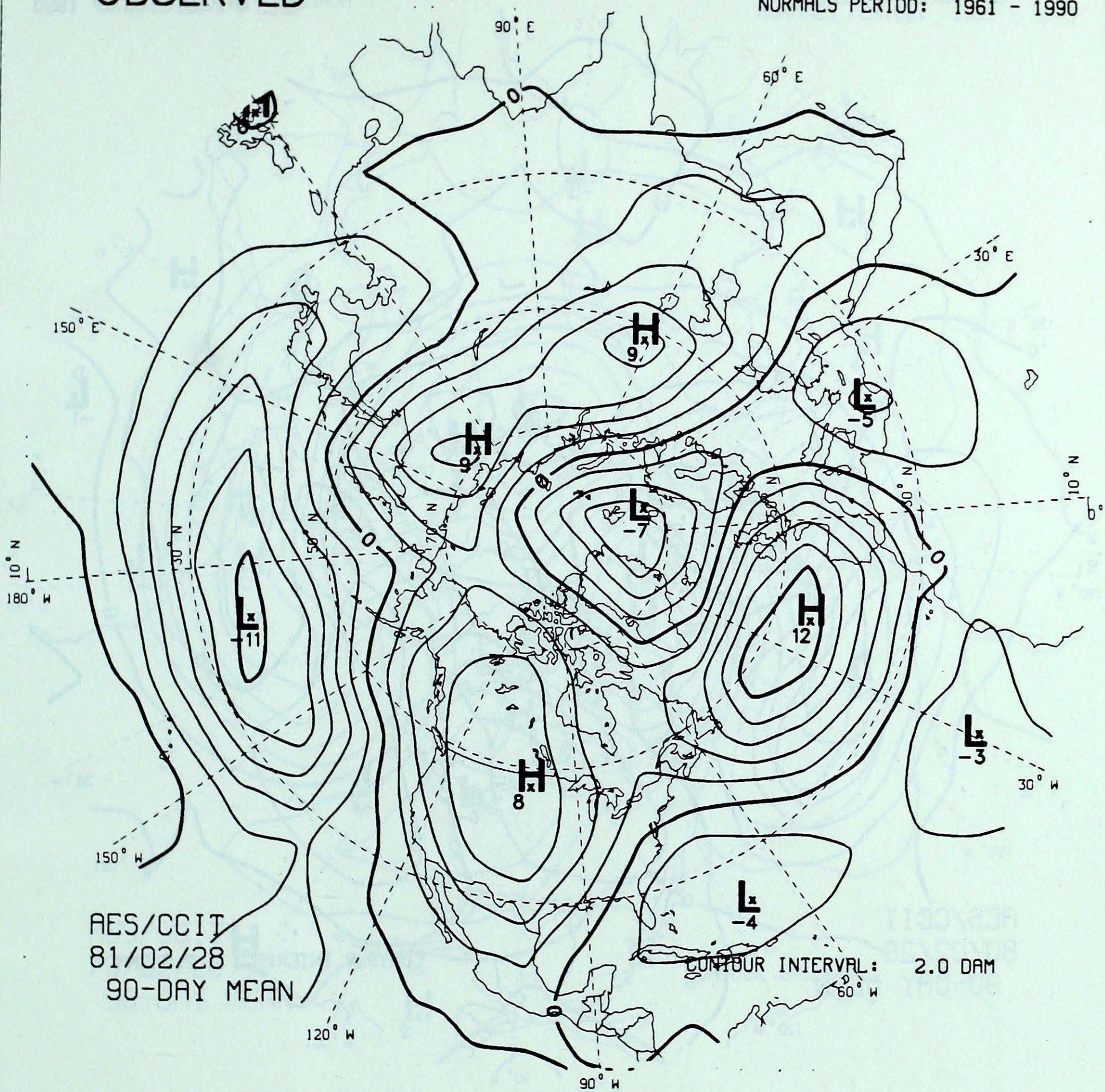
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 80 TO 28 FEB 81
90-DAY MEAN

OBSERVED

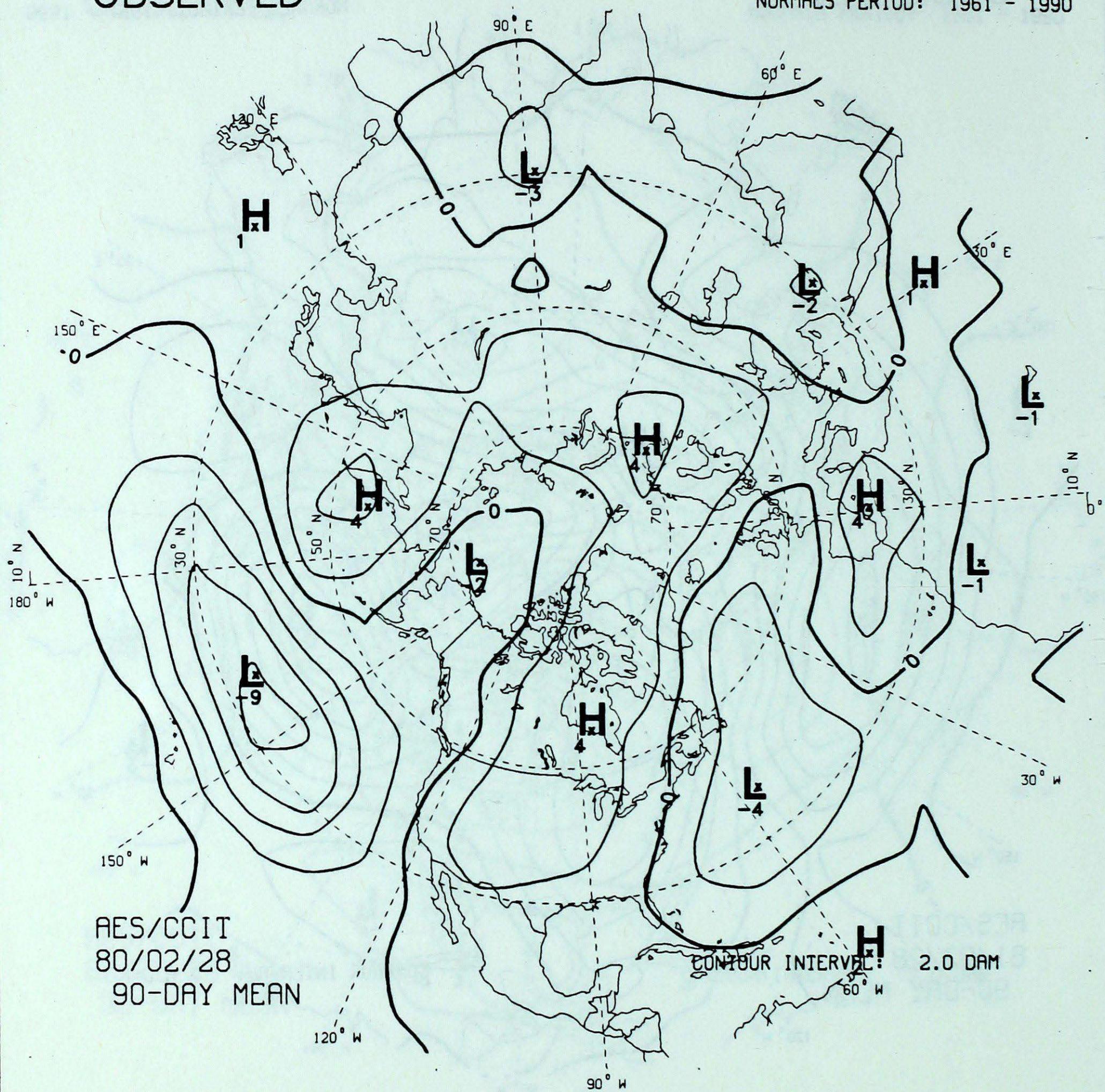
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 79 TO 28 FEB 80
90-DAY MEAN

OBSERVED

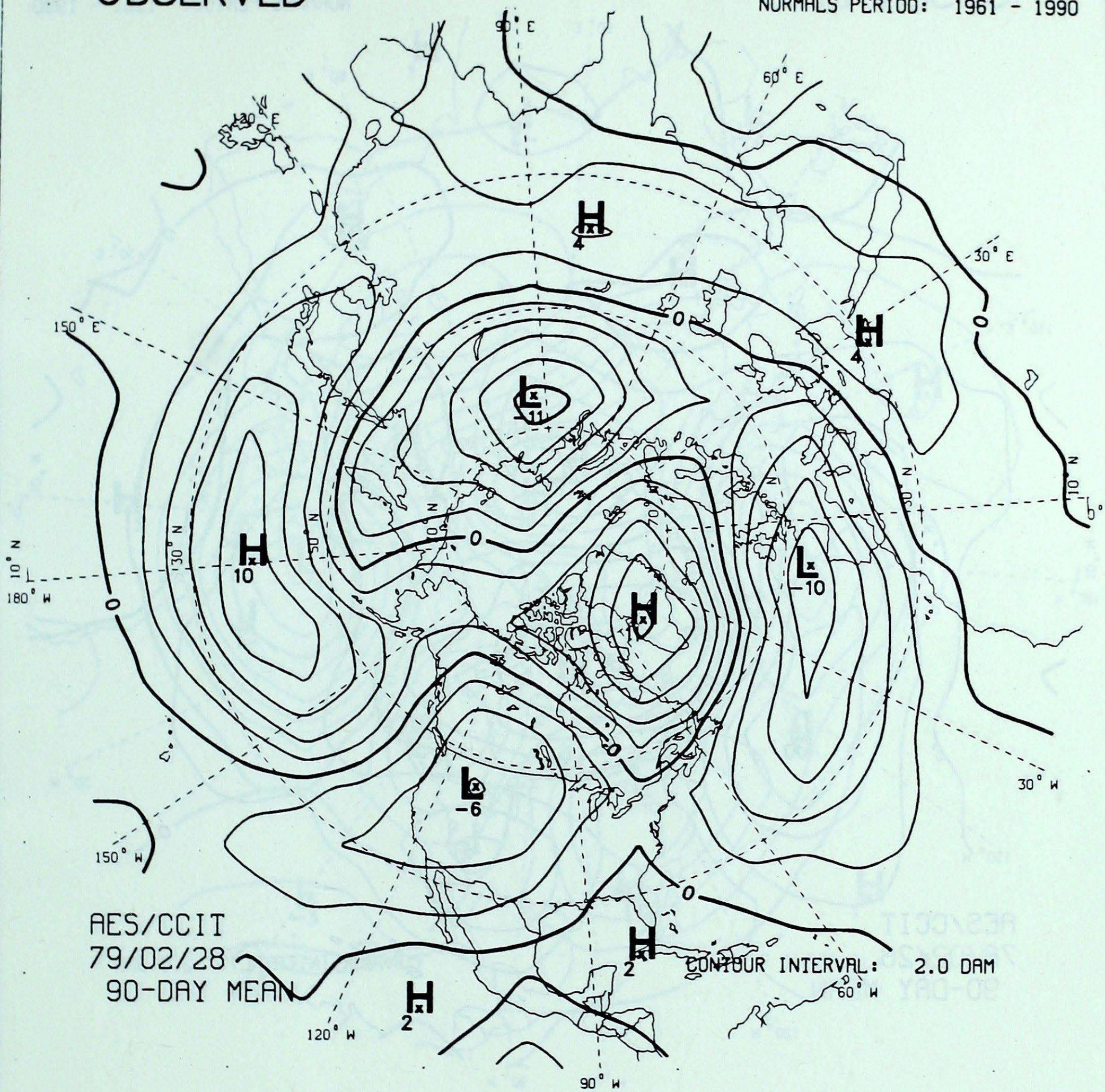
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 78 TO 28 FEB 79
90-DAY MEAN

OBSERVED

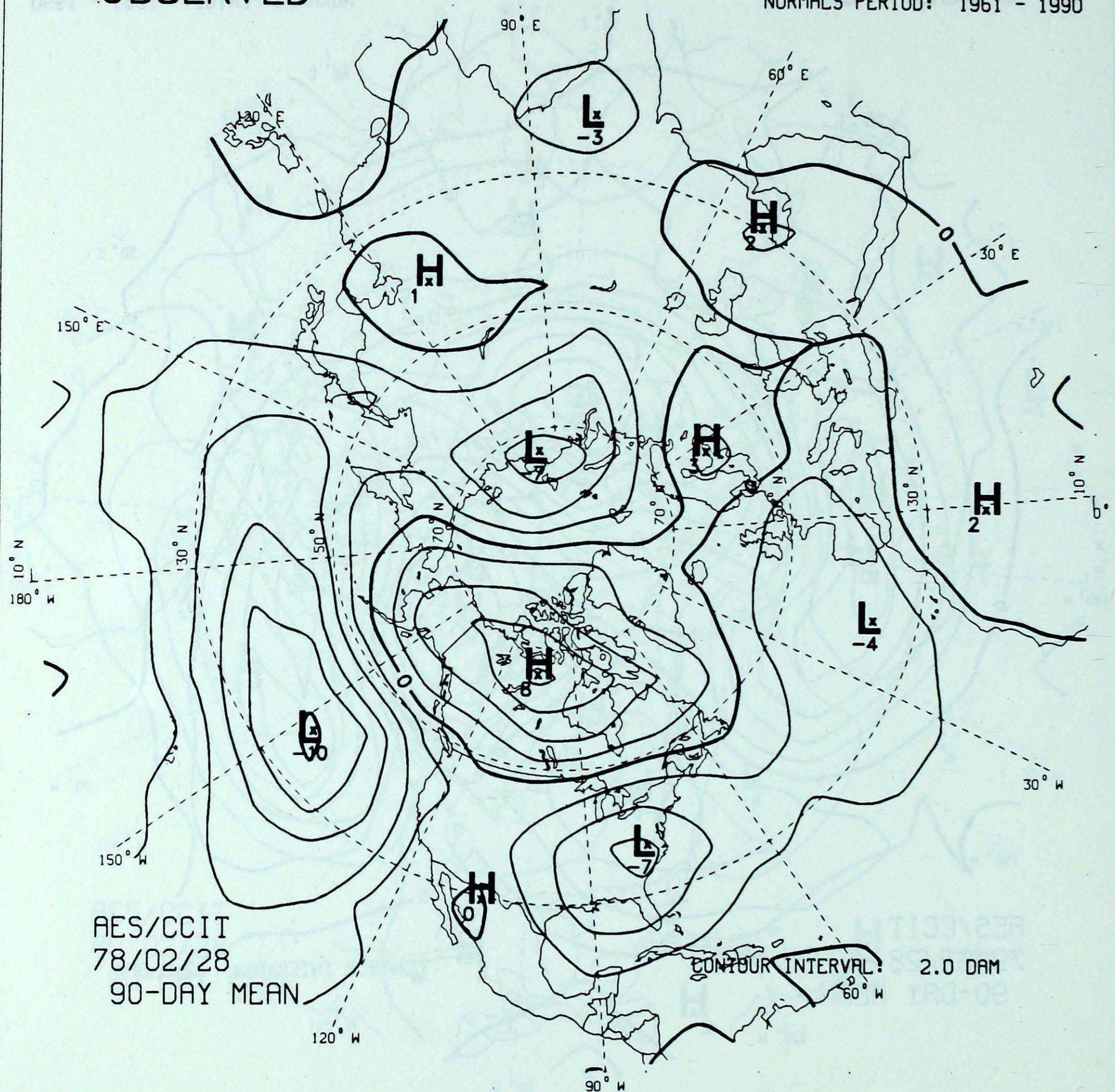
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 77 TO 28 FEB 78
90-DAY MEAN

OBSERVED

NORMALS PERIOD: 1961 - 1990

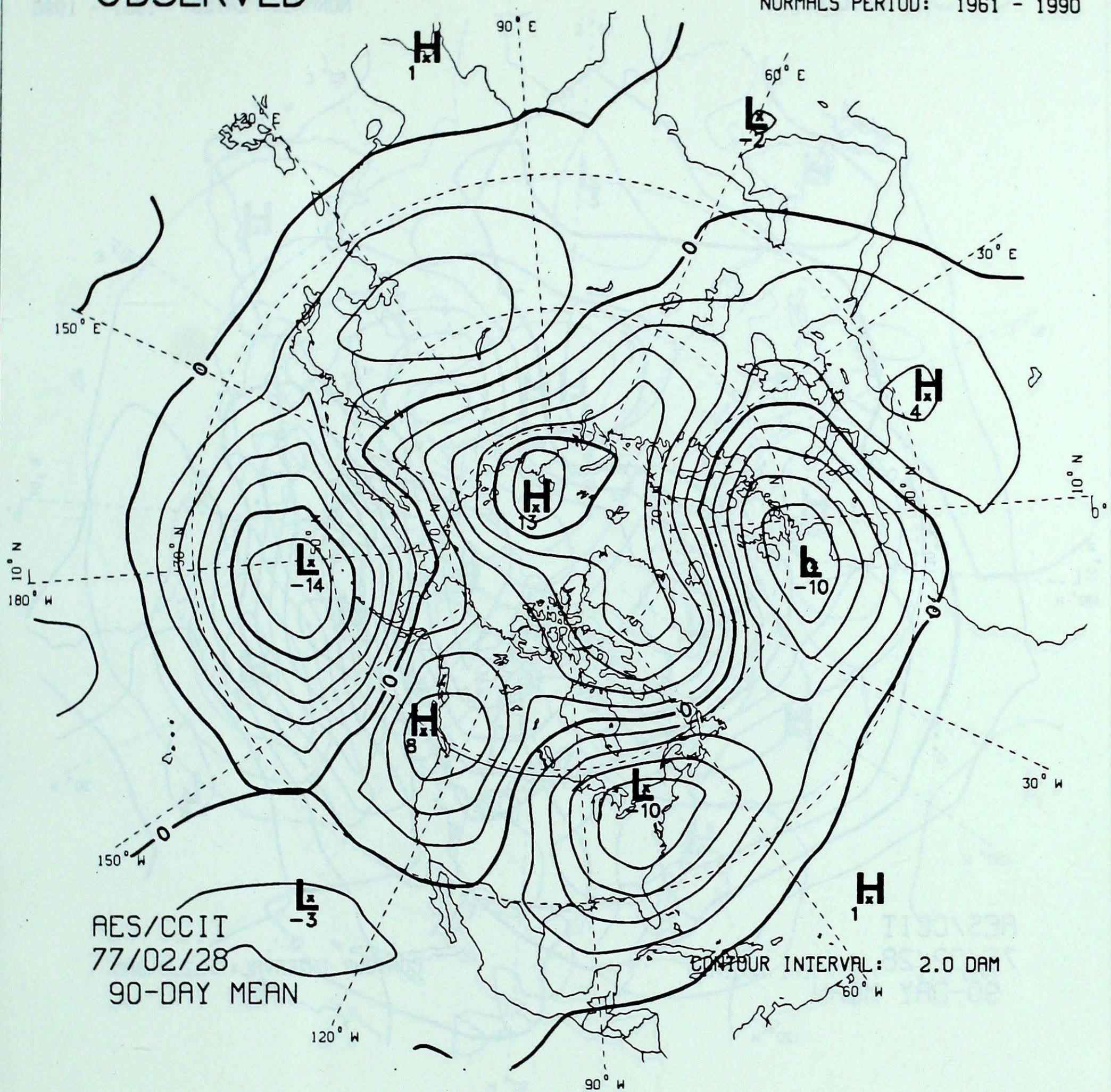


AES/CCIT
78/02/28
90-DAY MEAN

50 KPA HEIGHT ANOMALY
01 DEC 76 TO 28 FEB 77
90-DAY MEAN

OBSERVED

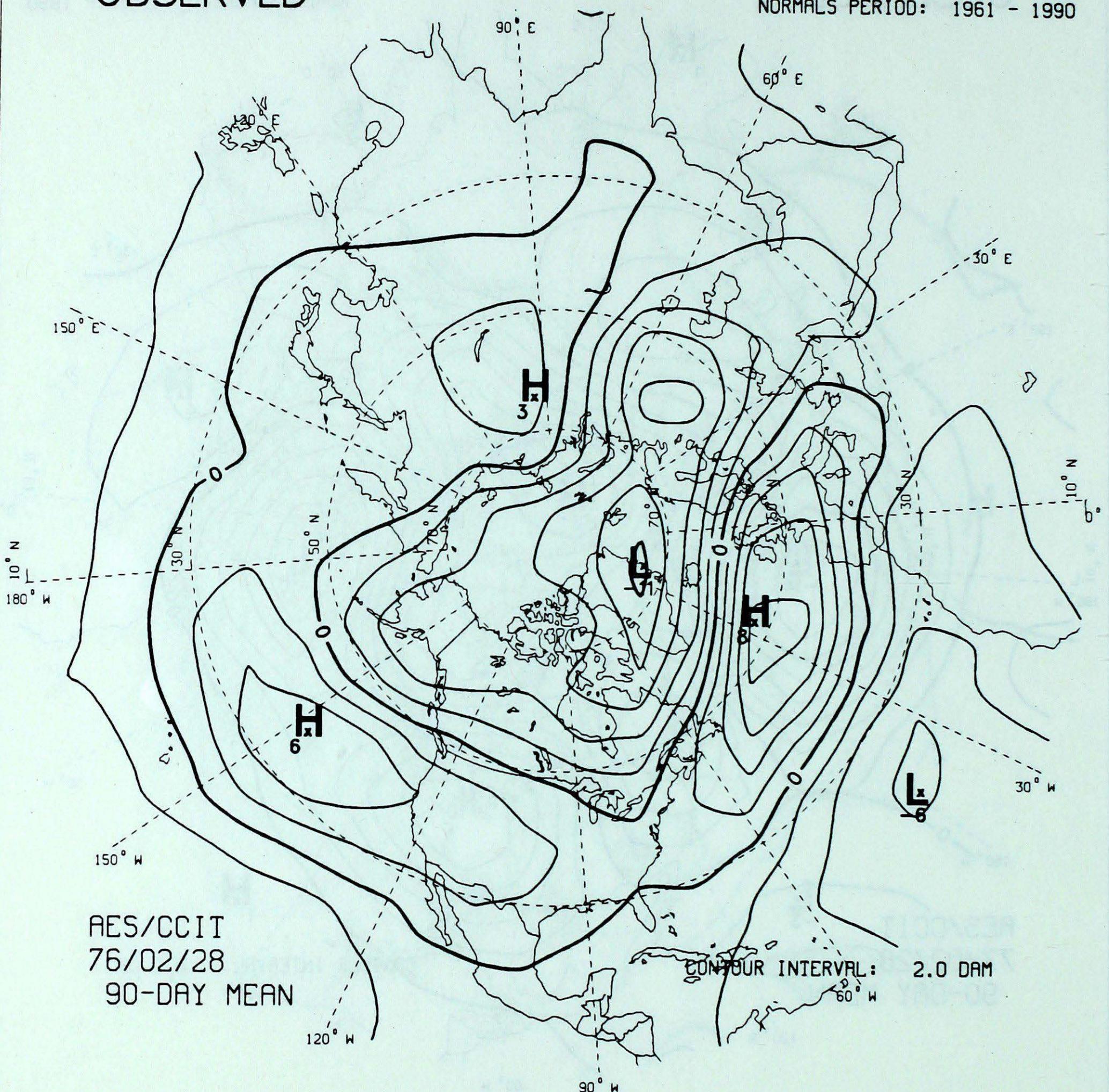
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 75 TO 28 FEB 76
90-DAY MEAN

OBSERVED

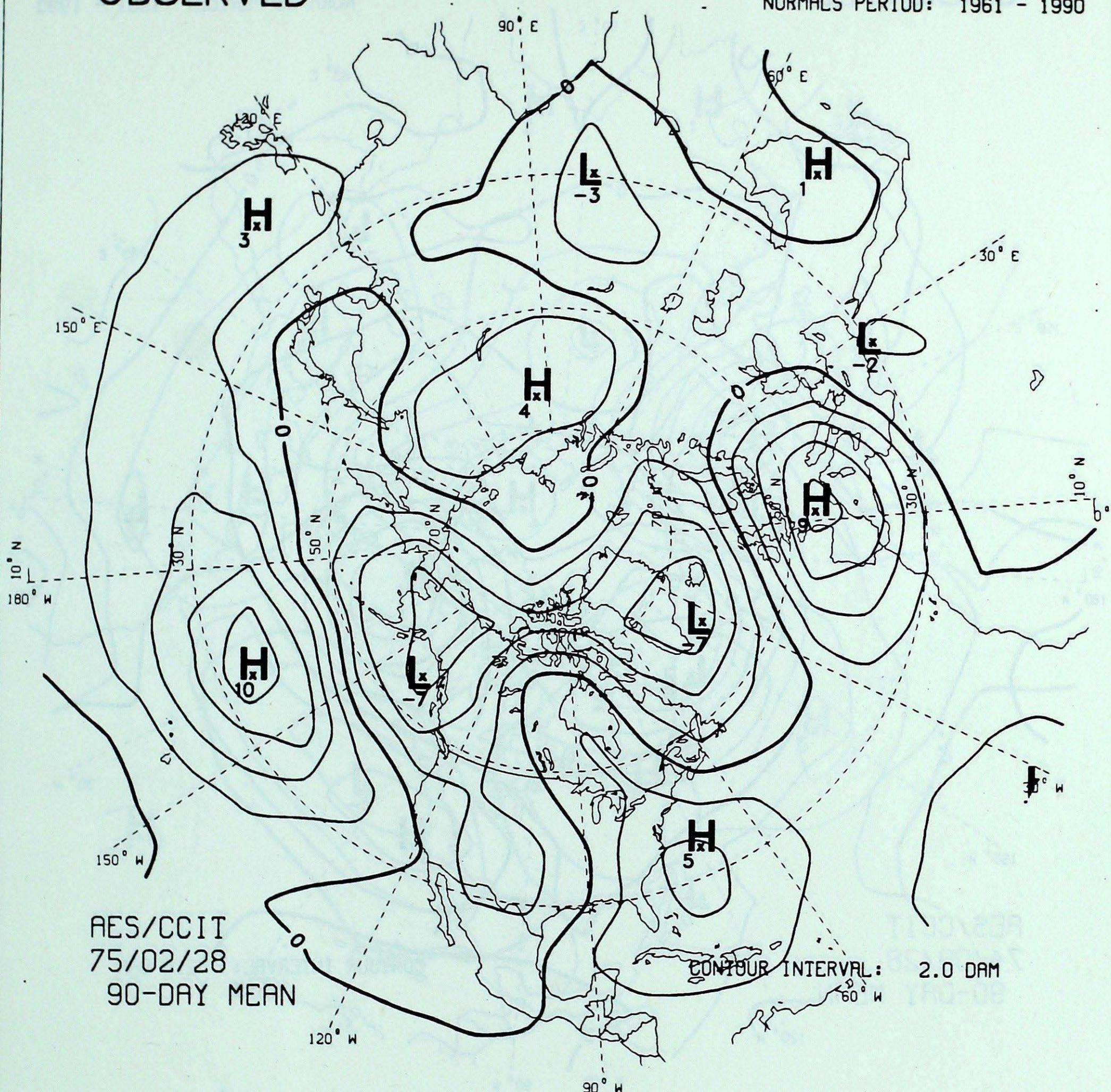
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 74 TO 28 FEB 75
90-DAY MEAN

OBSERVED

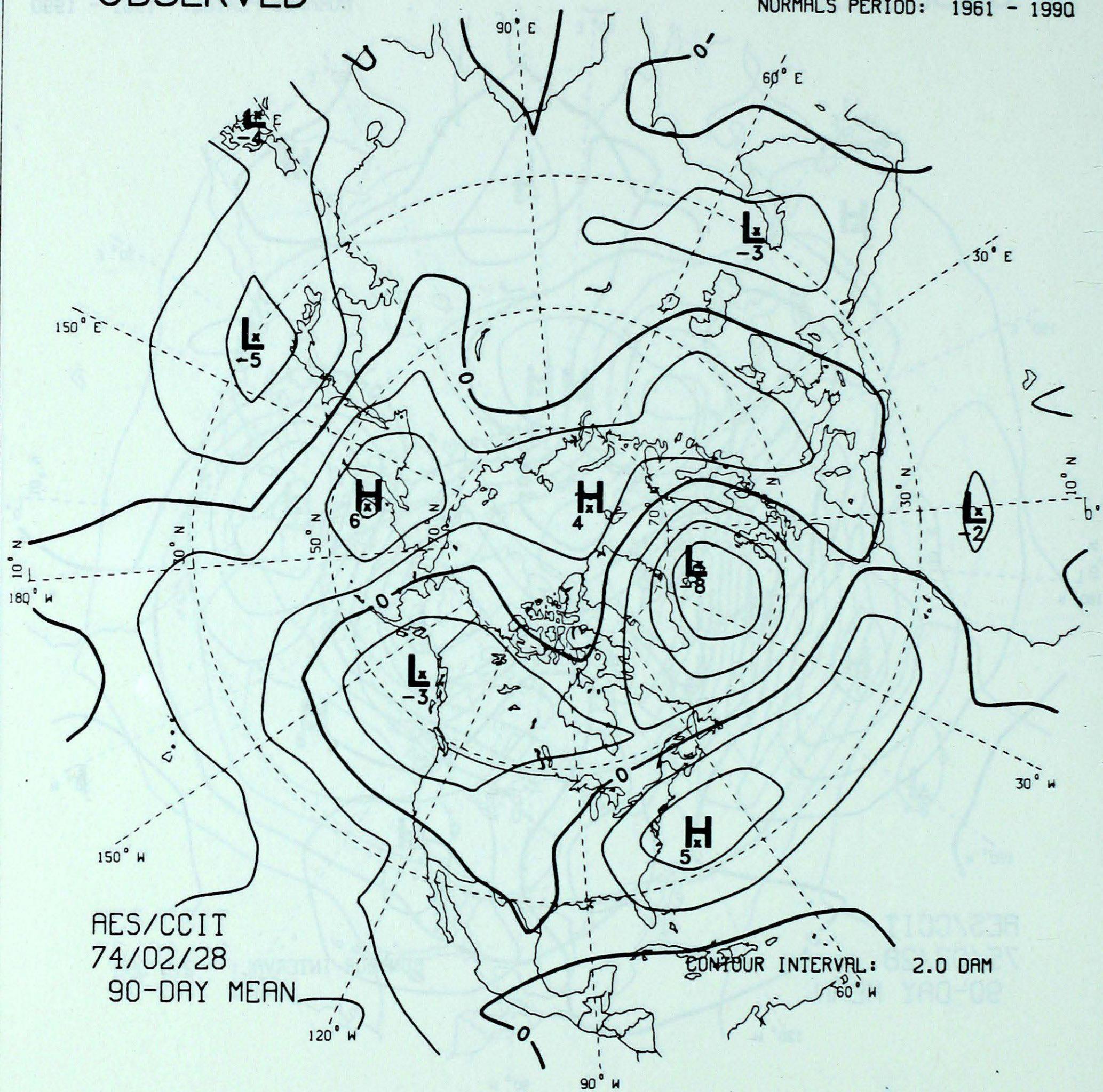
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 73 TO 28 FEB 74
90-DAY MEAN

OBSERVED

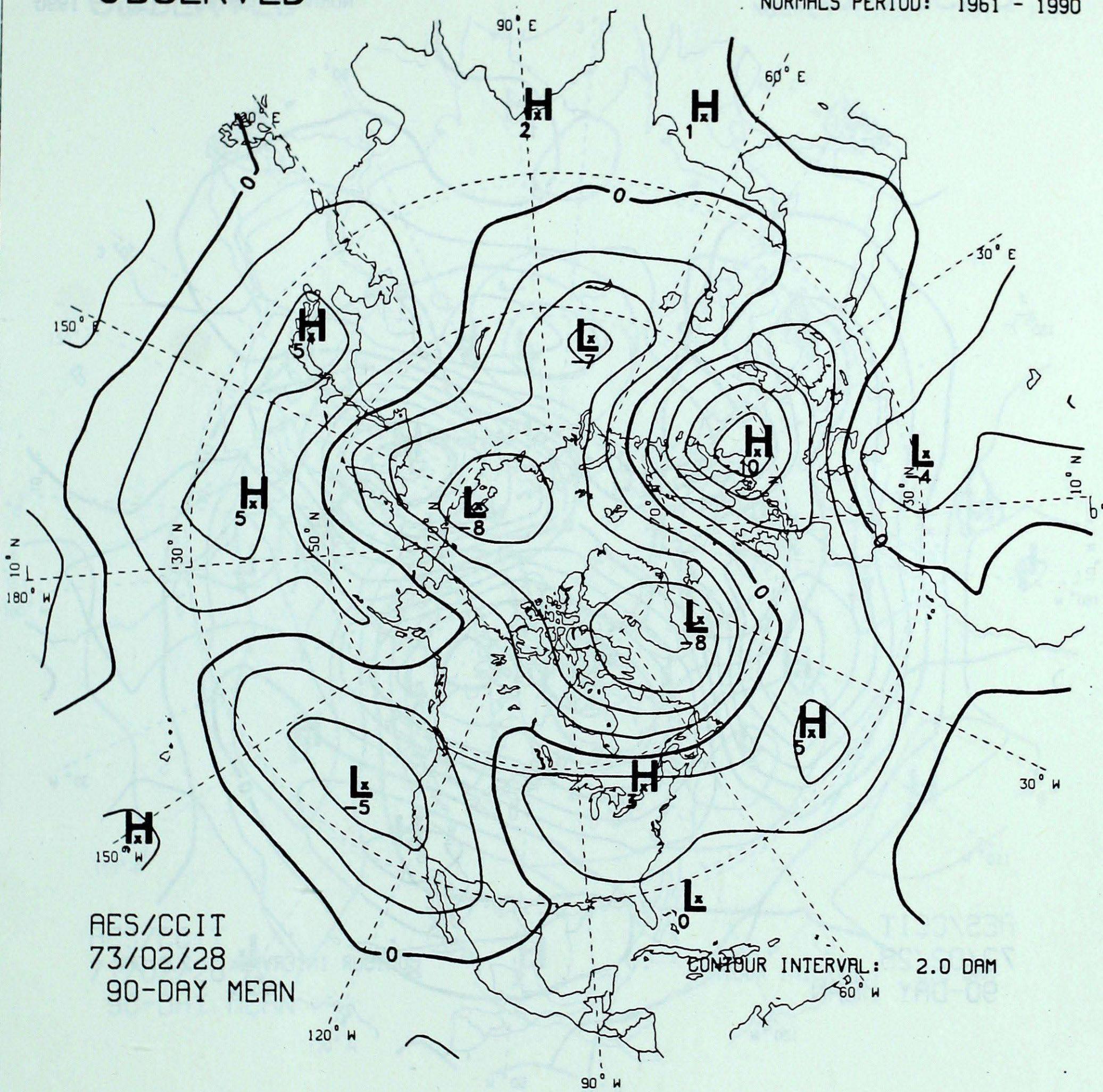
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 72 TO 28 FEB 73
90-DAY MEAN

OBSERVED

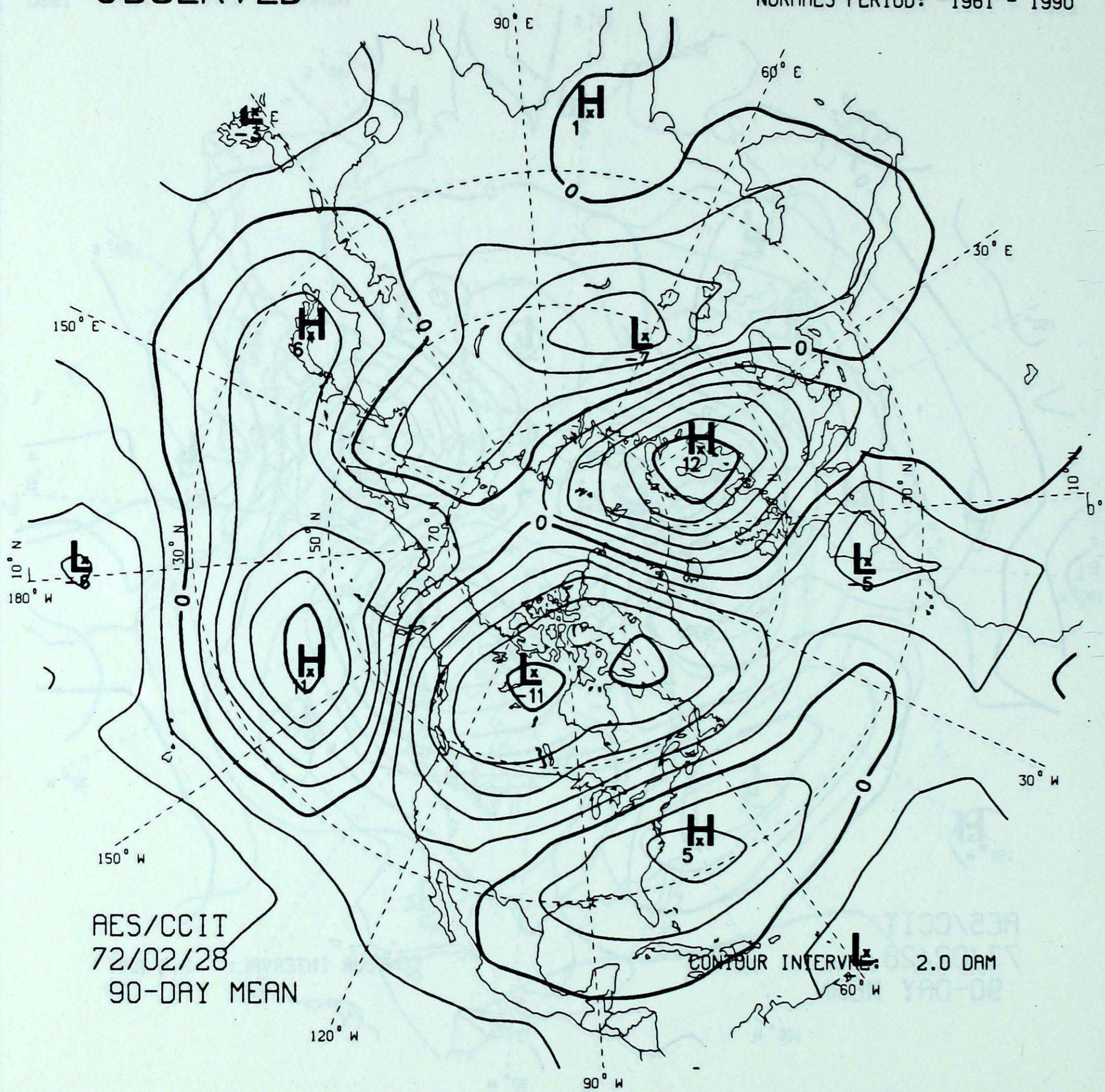
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 71 TO 28 FEB 72
90-DAY MEAN

OBSERVED

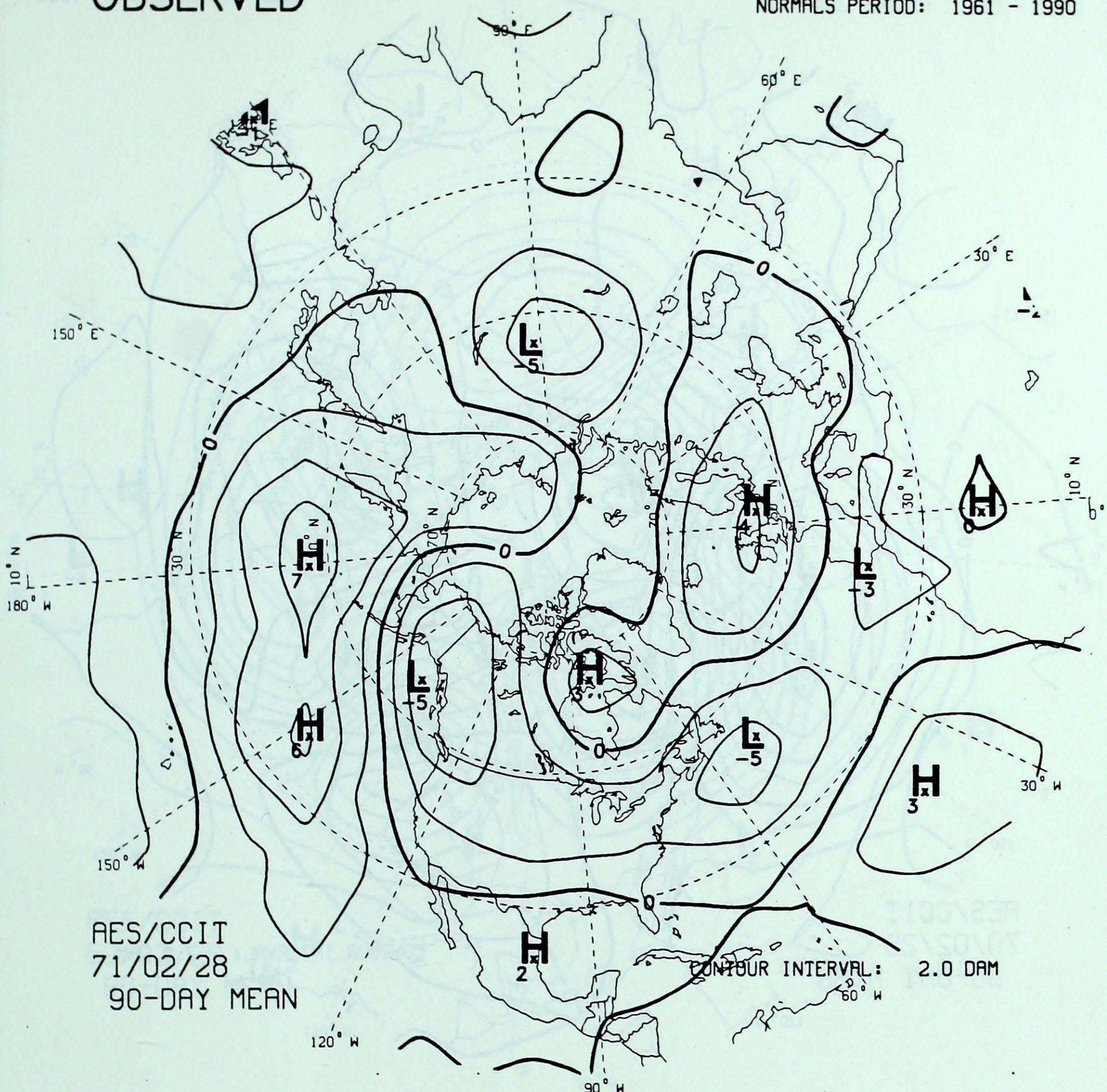
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 70 TO 28 FEB 71
90-DAY MEAN

OBSERVED

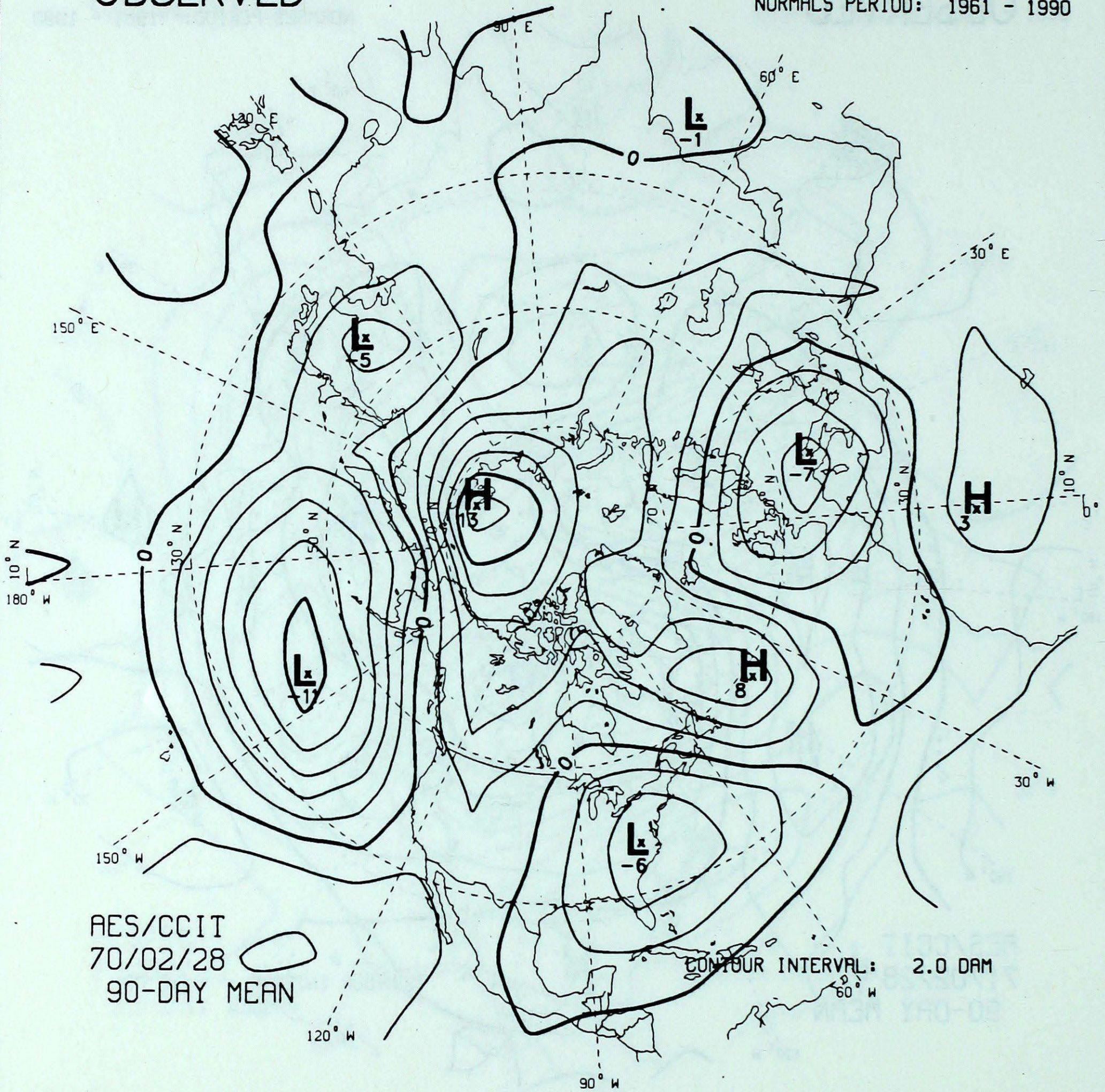
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 69 TO 28 FEB 70
90-DAY MEAN

OBSERVED

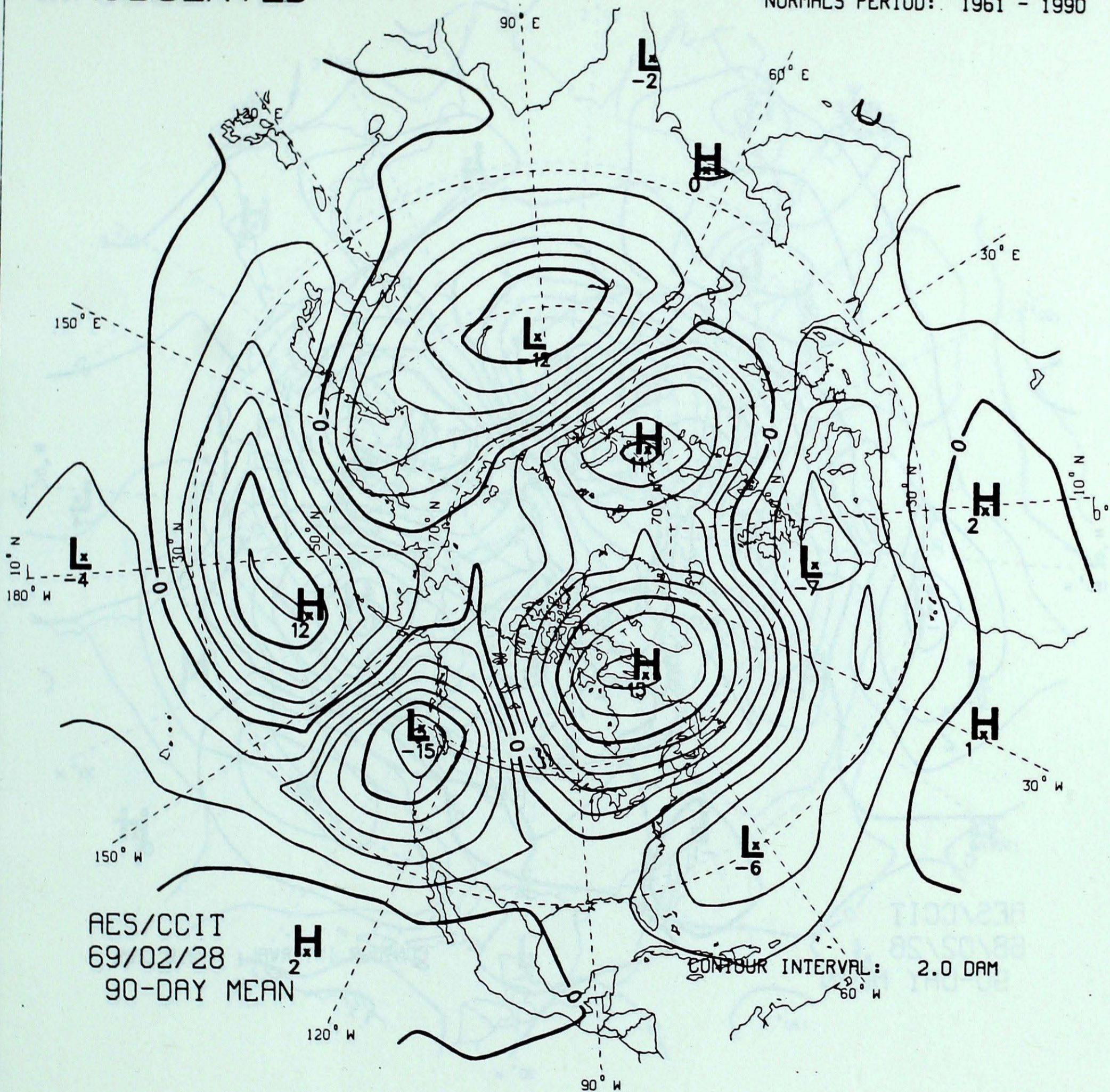
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 68 TO 28 FEB 69
90-DAY MEAN

OBSERVED

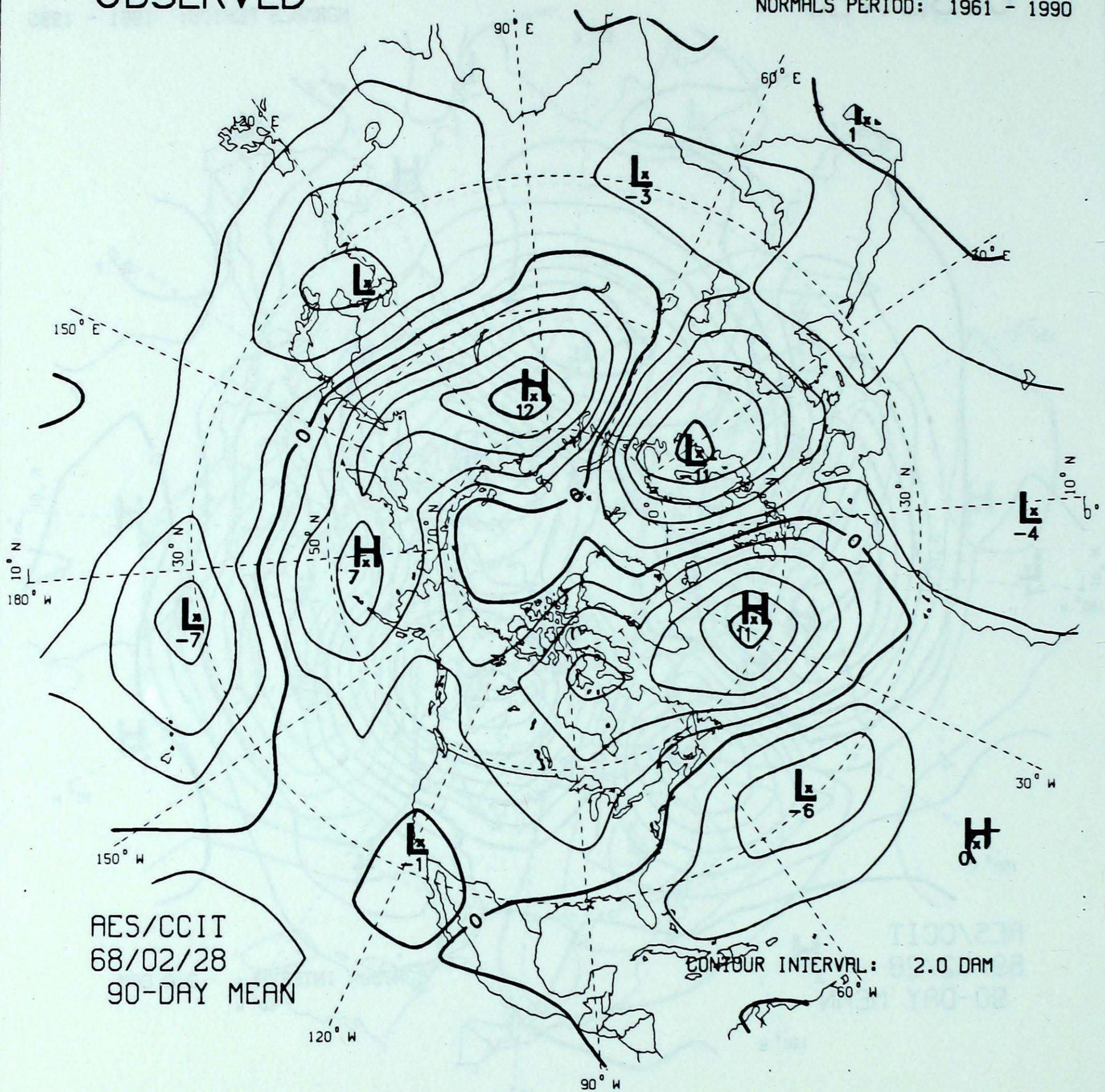
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 67 TO 28 FEB 68
90-DAY MEAN

OBSERVED

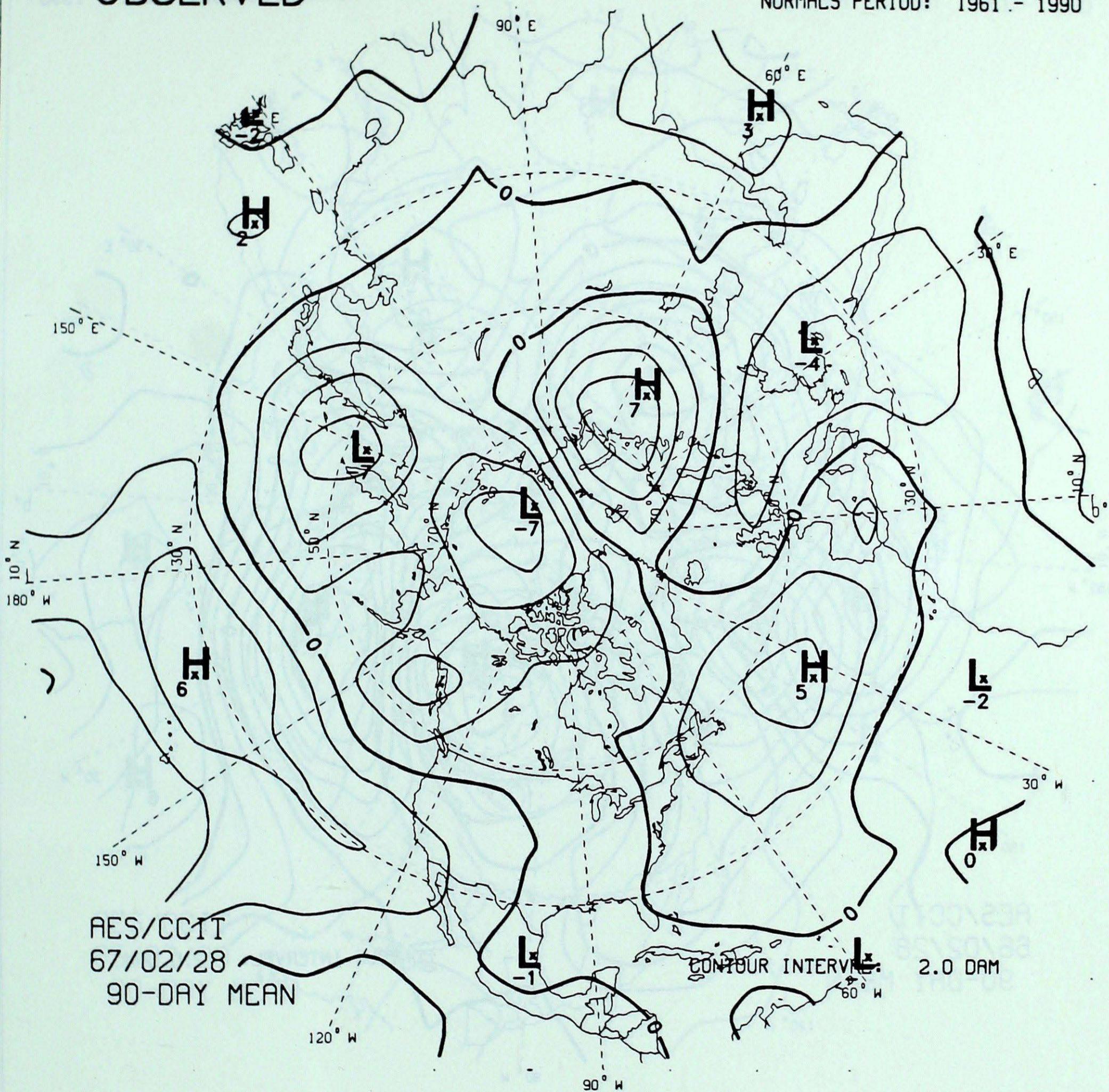
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 66 TO 28 FEB 67
90-DAY MEAN

OBSERVED

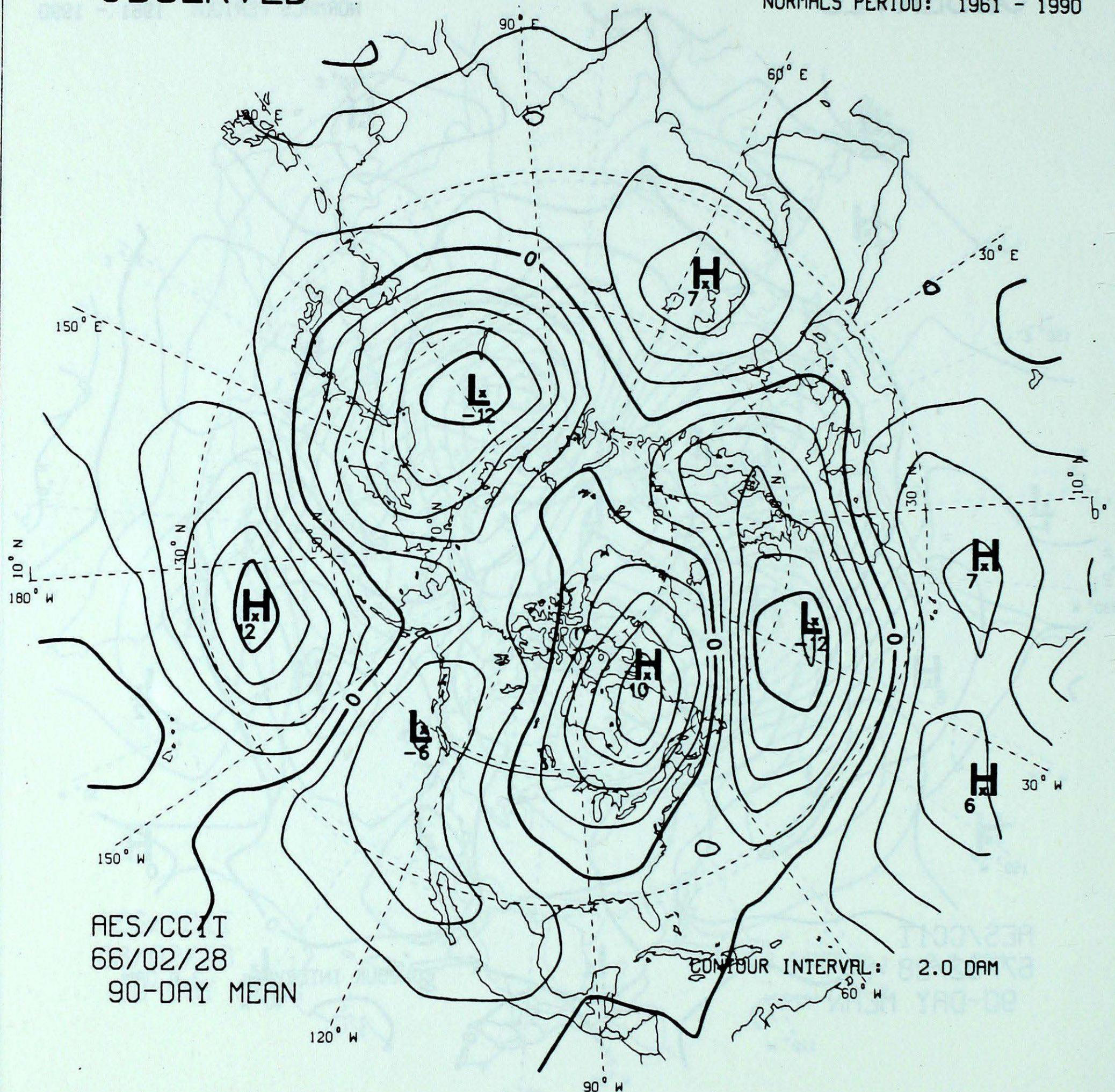
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 65 TO 28 FEB 66
90-DAY MEAN

OBSERVED

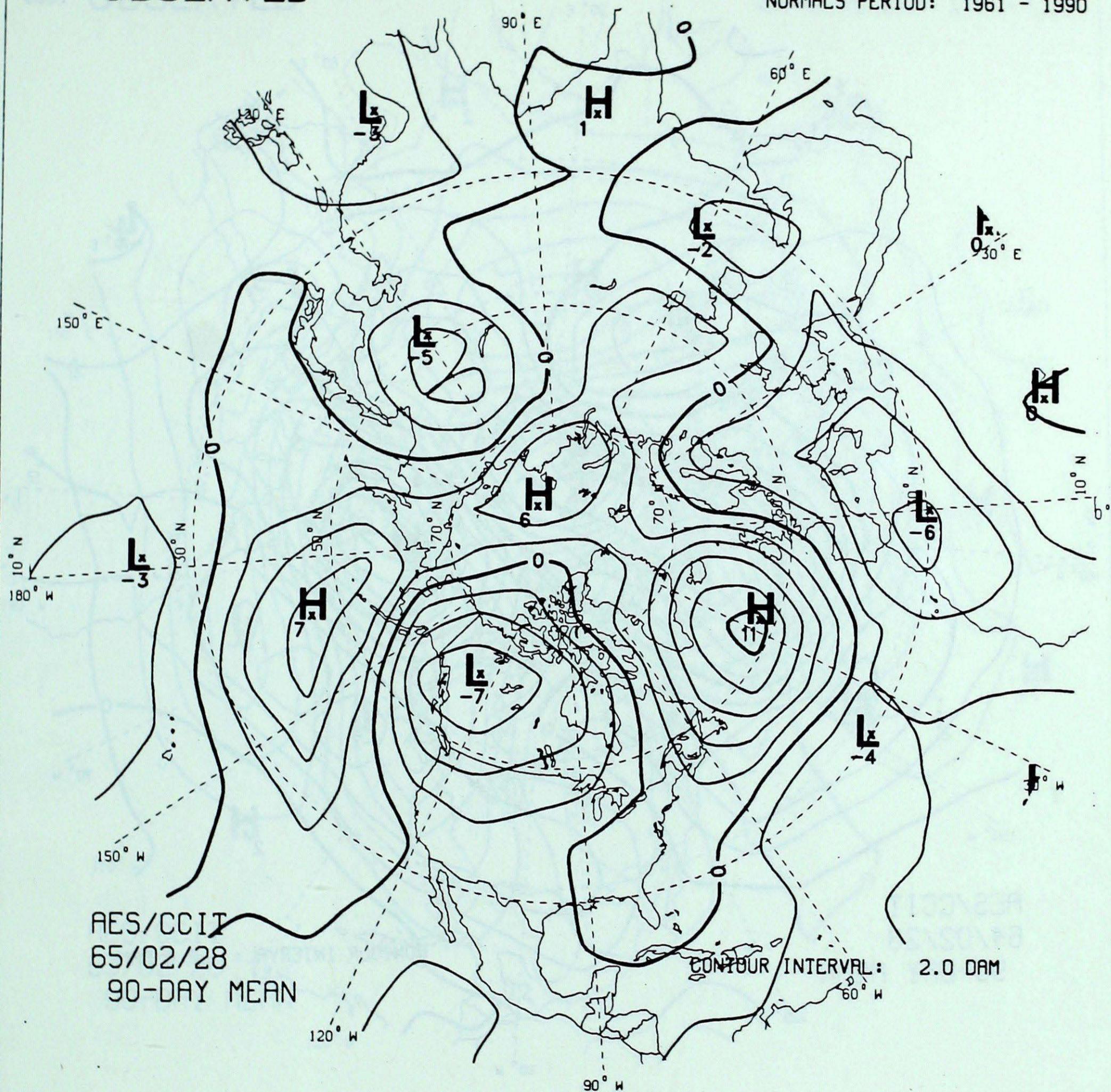
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 64 TO 28 FEB 65
90-DAY MEAN

OBSERVED

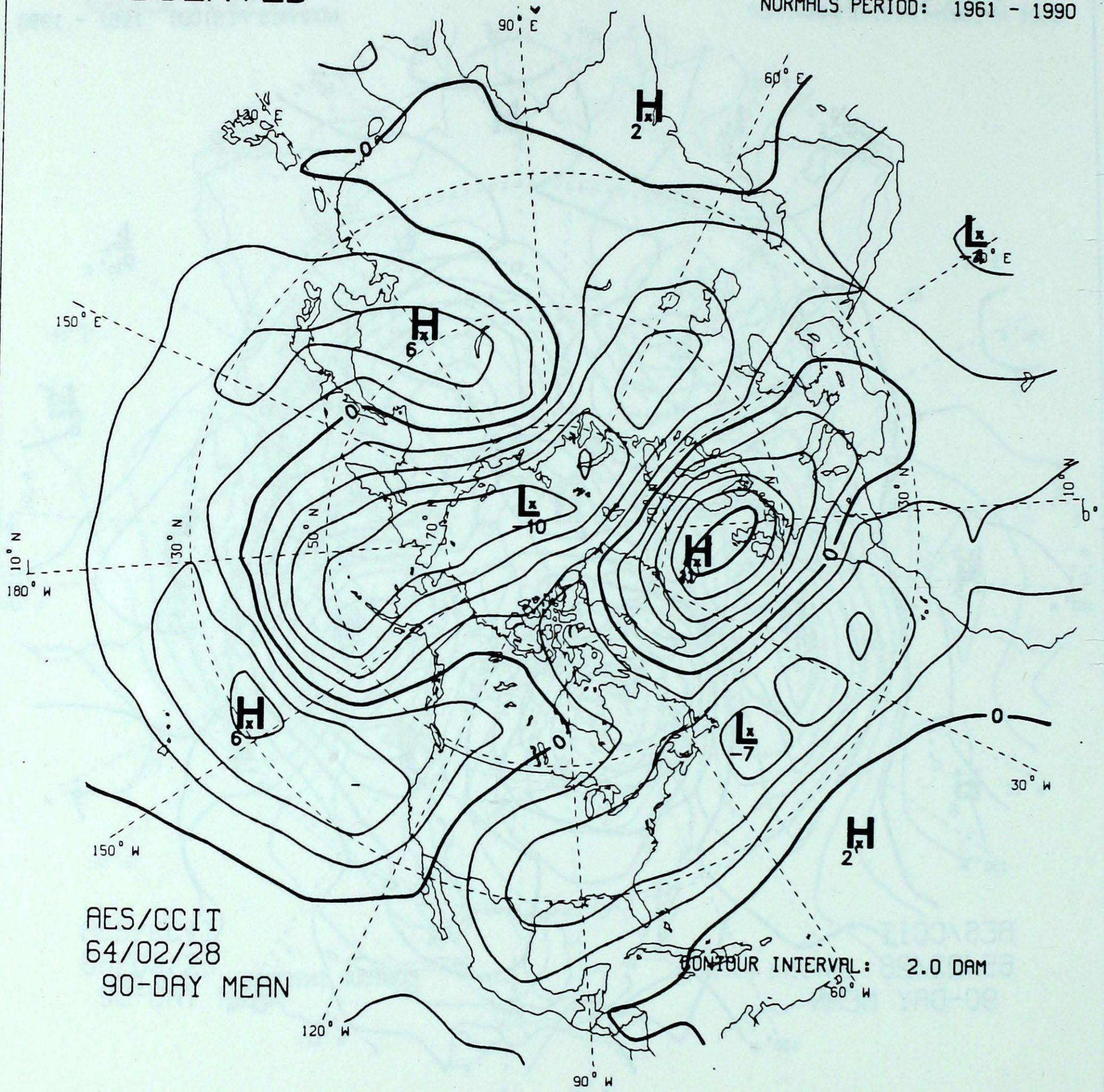
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 63 TO 28 FEB 64
90-DAY MEAN

OBSERVED

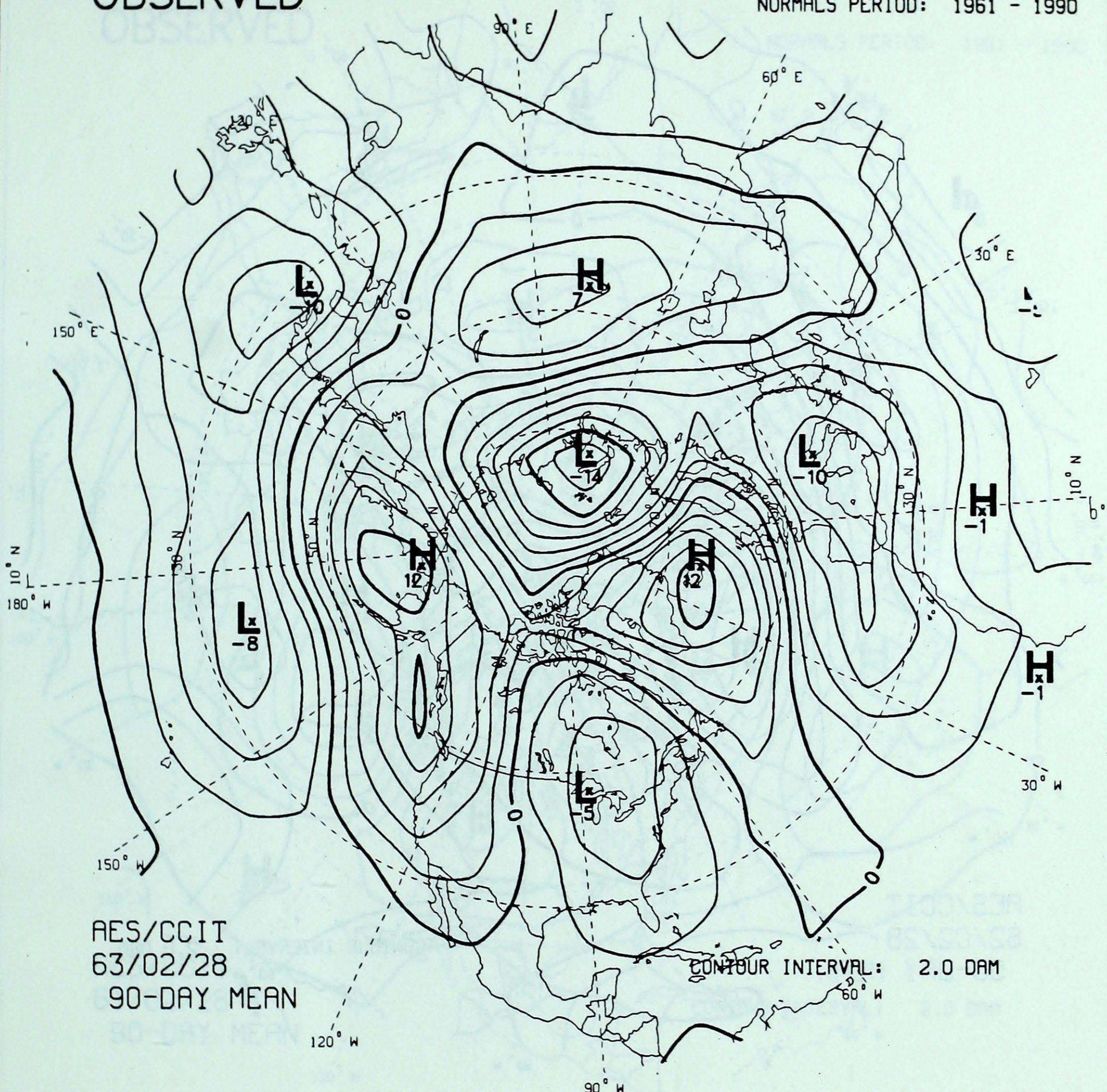
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 62 TO 28 FEB 63
90-DAY MEAN

OBSERVED

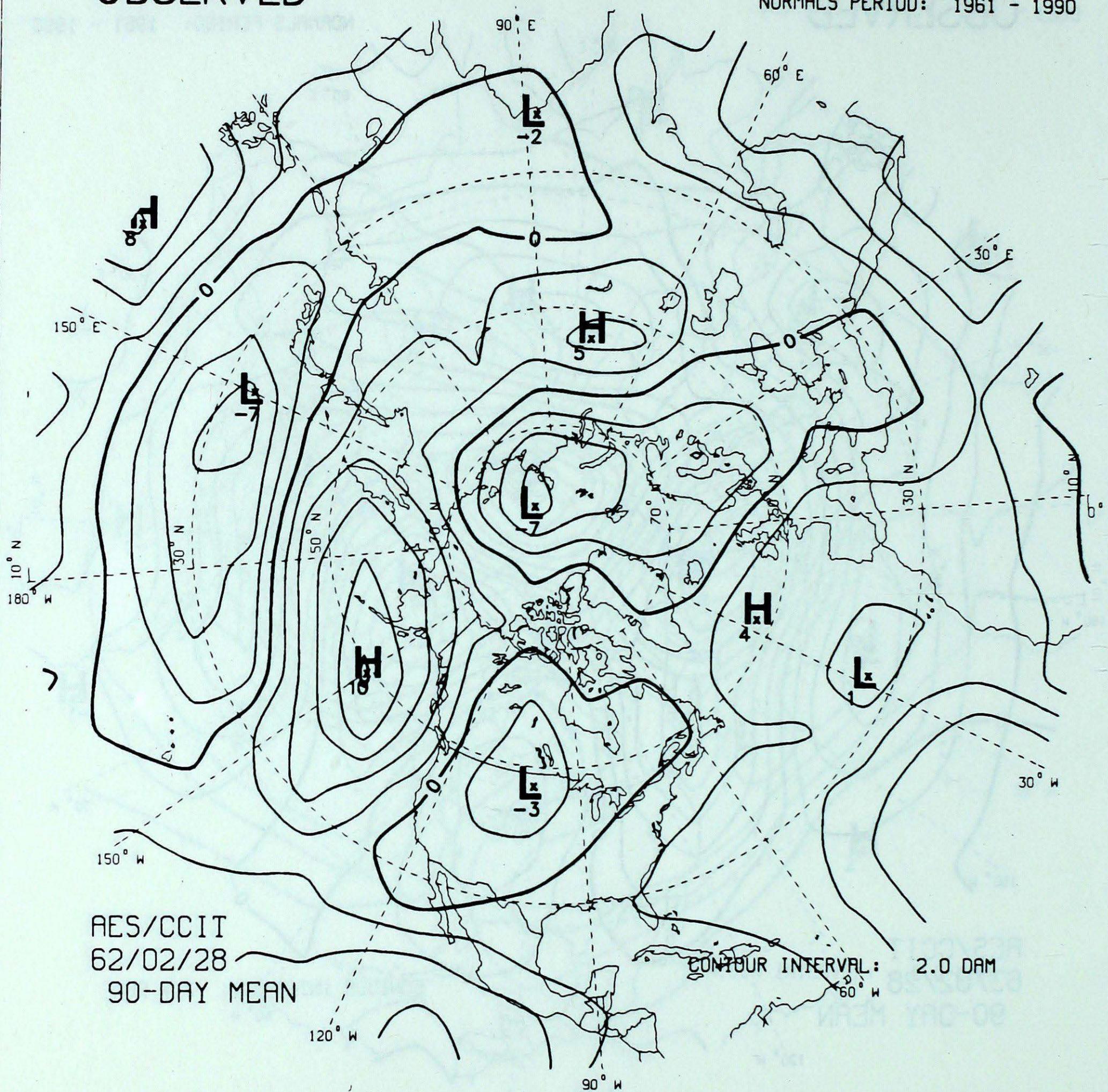
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 61 TO 28 FEB 62
90-DAY MEAN

OBSERVED

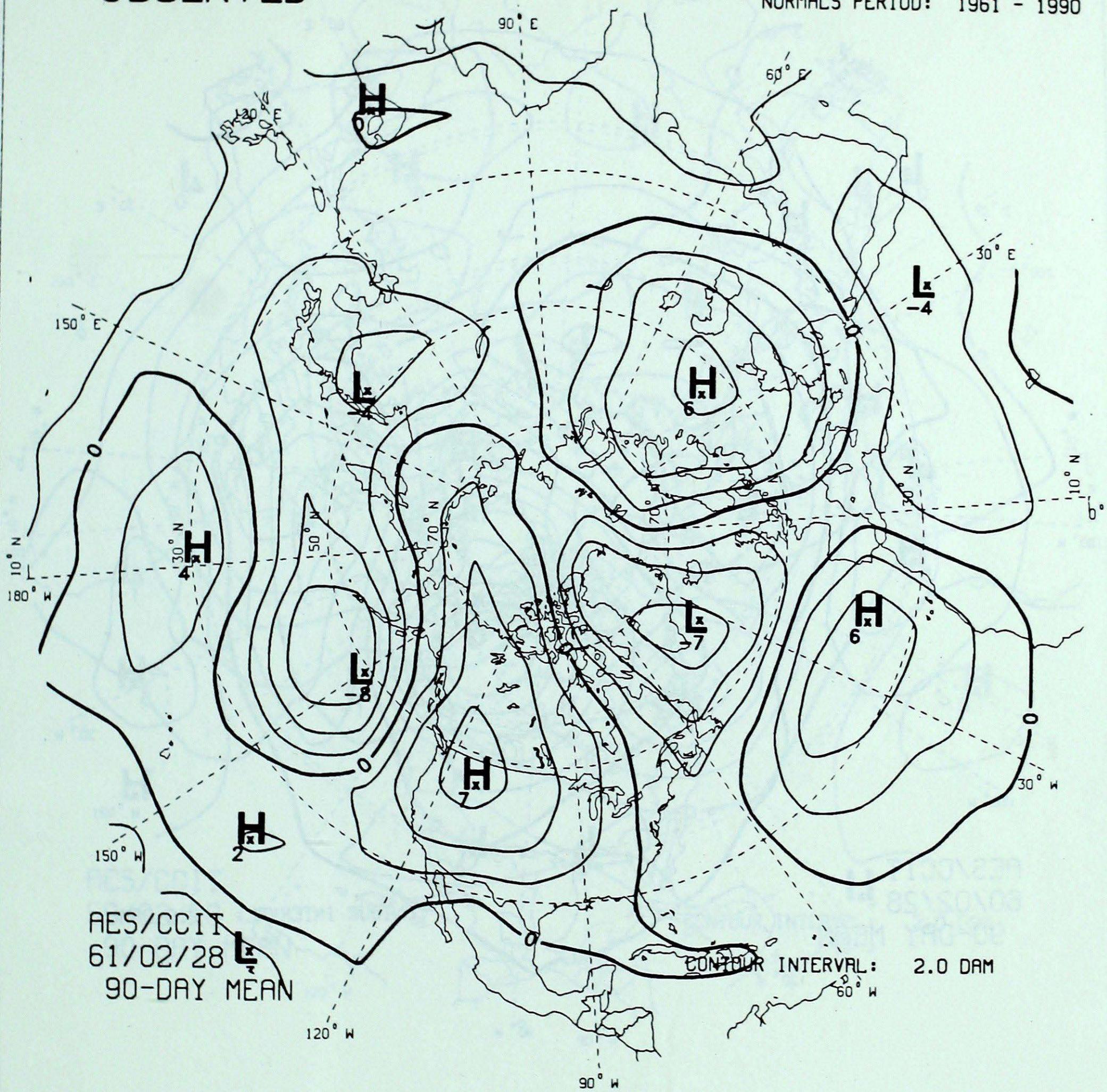
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 60 TO 28 FEB 61
90-DAY MEAN

OBSERVED

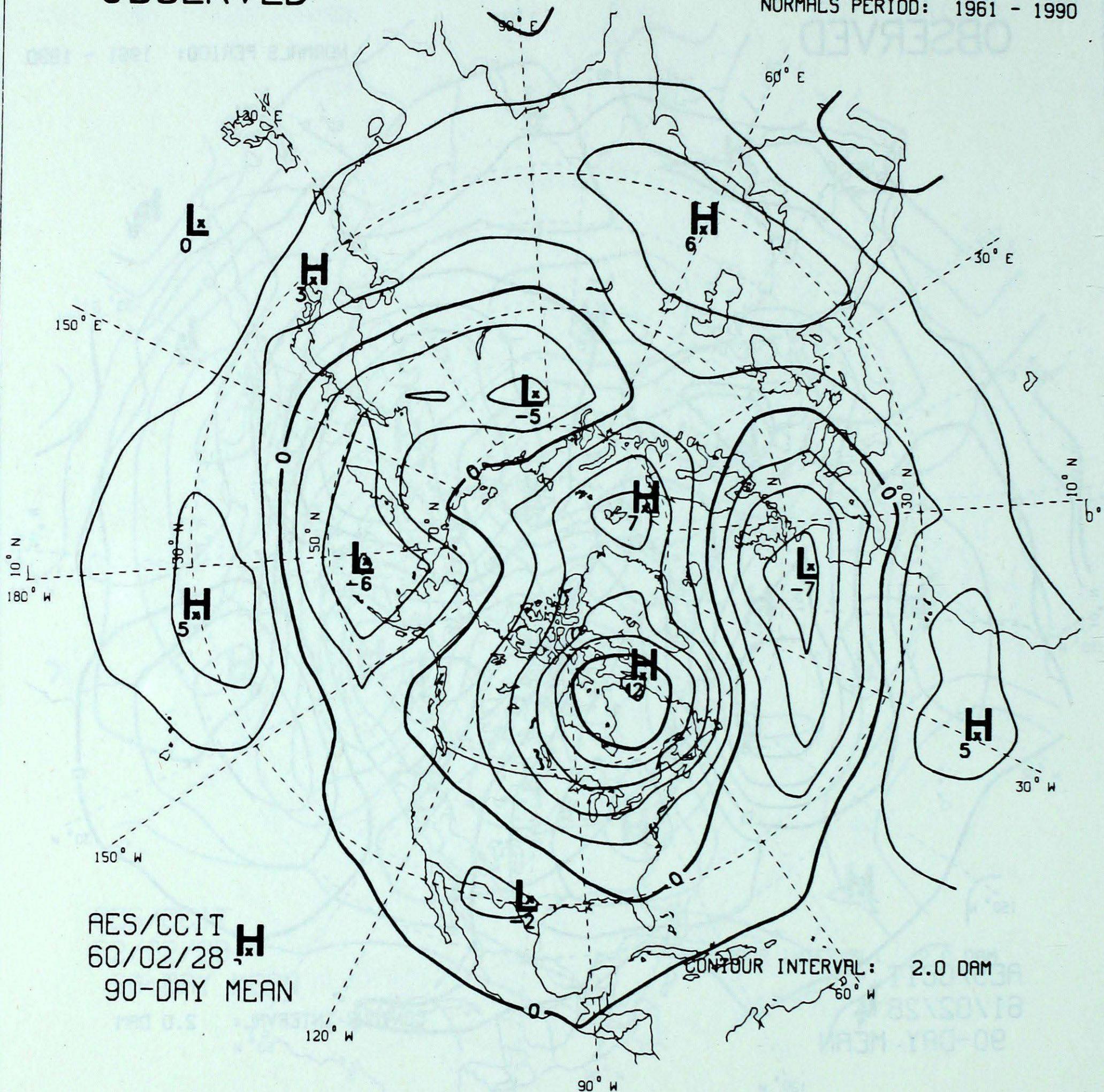
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 59 TO 28 FEB 60
90-DAY MEAN

OBSERVED

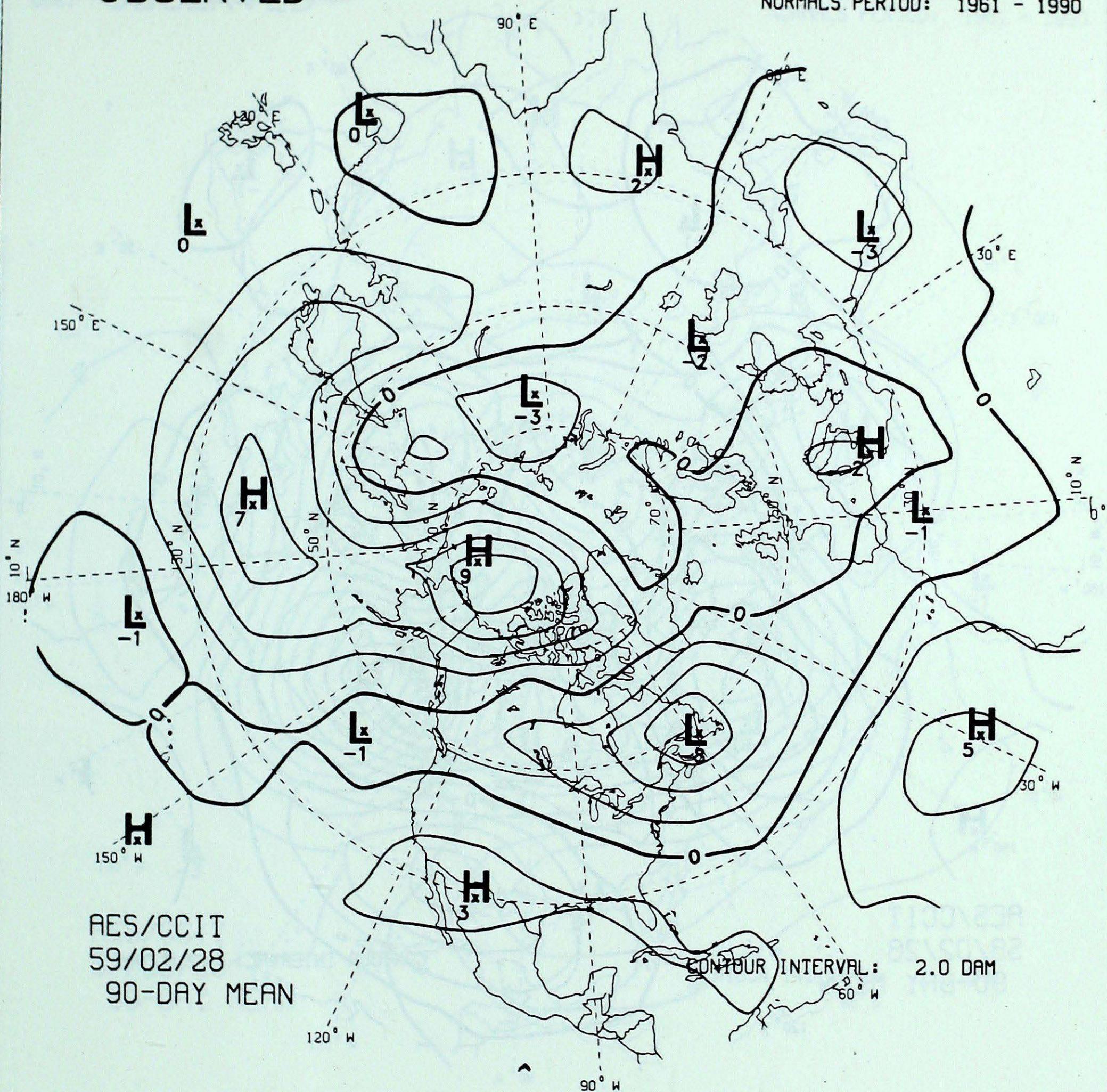
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 58 TO 28 FEB 59
90-DAY MEAN

OBSERVED

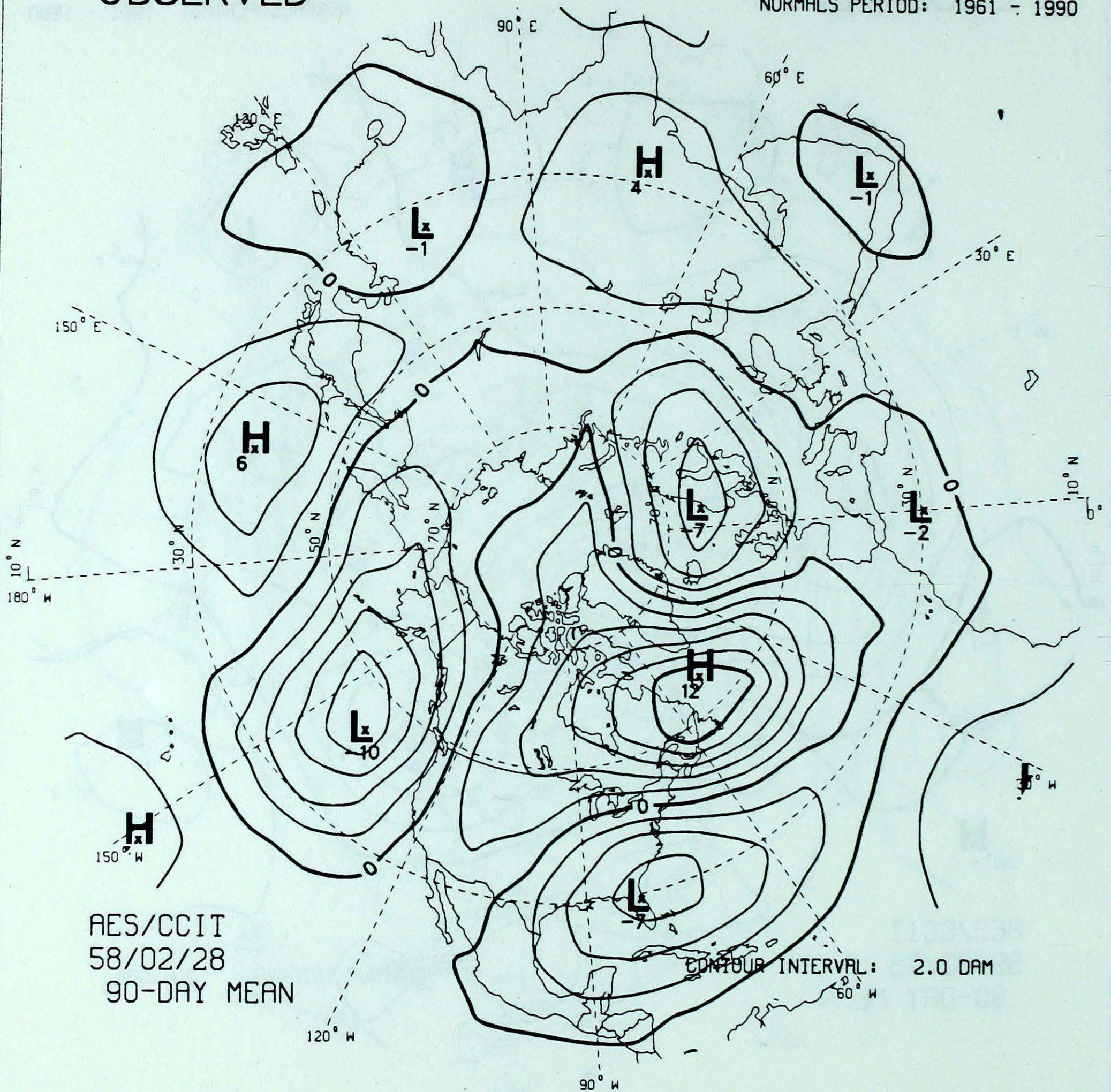
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 57 TO 28 FEB 58
90-DAY MEAN

OBSERVED

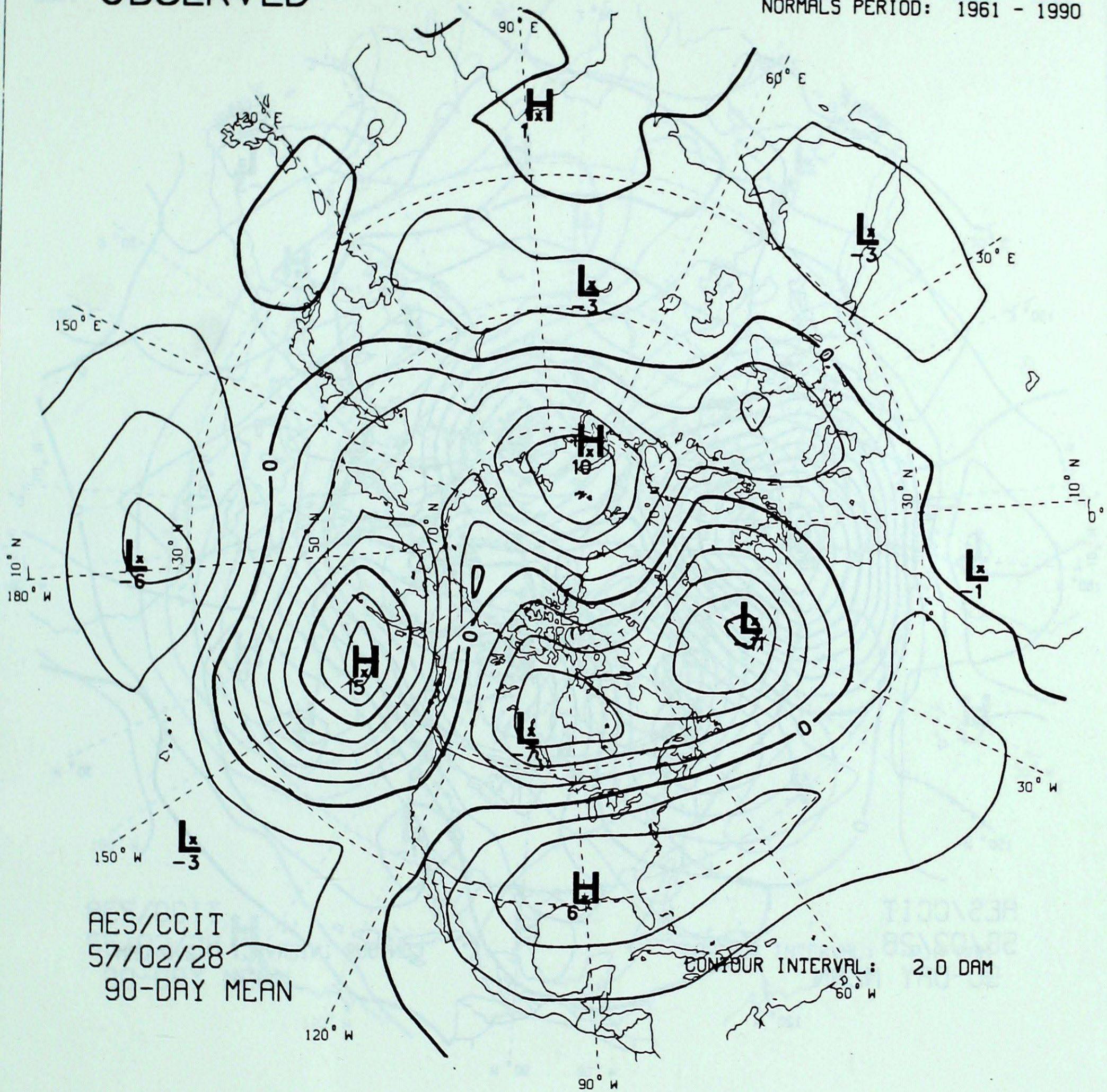
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 56 TO 28 FEB 57
90-DAY MEAN

OBSERVED

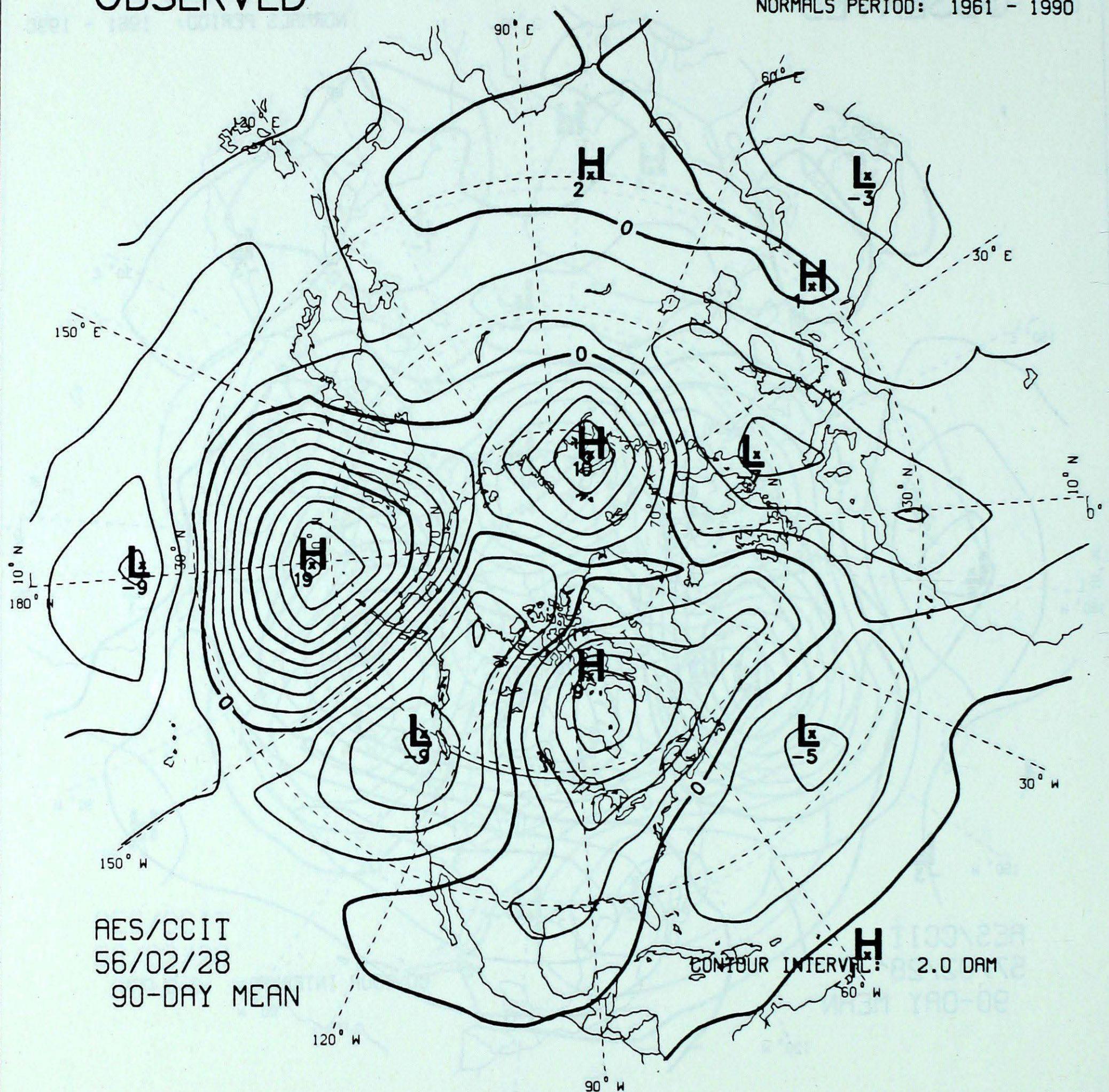
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 55 TO 28 FEB 56
90-DAY MEAN

OBSERVED

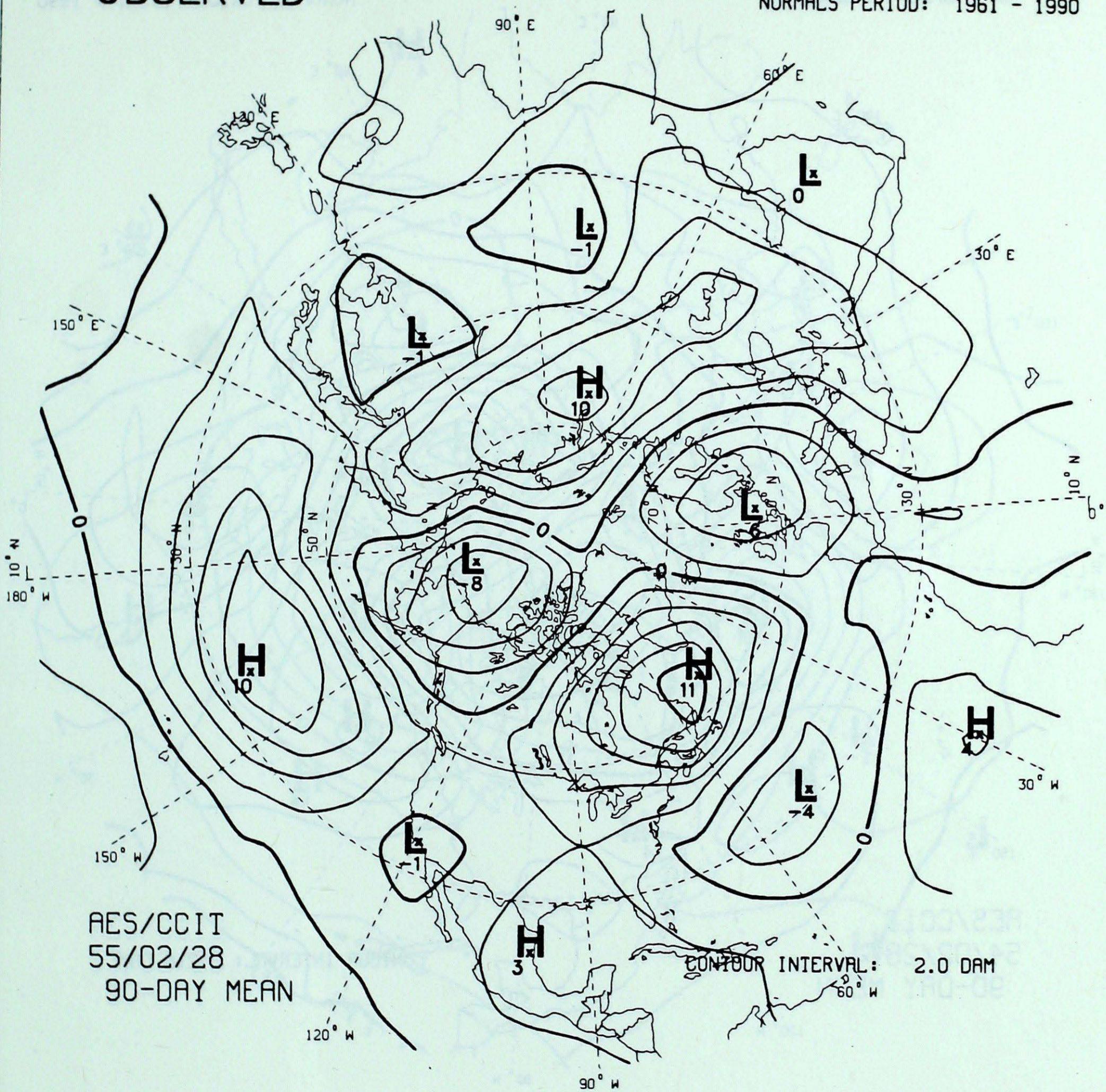
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 54 TO 28 FEB 55
90-DAY MEAN

OBSERVED

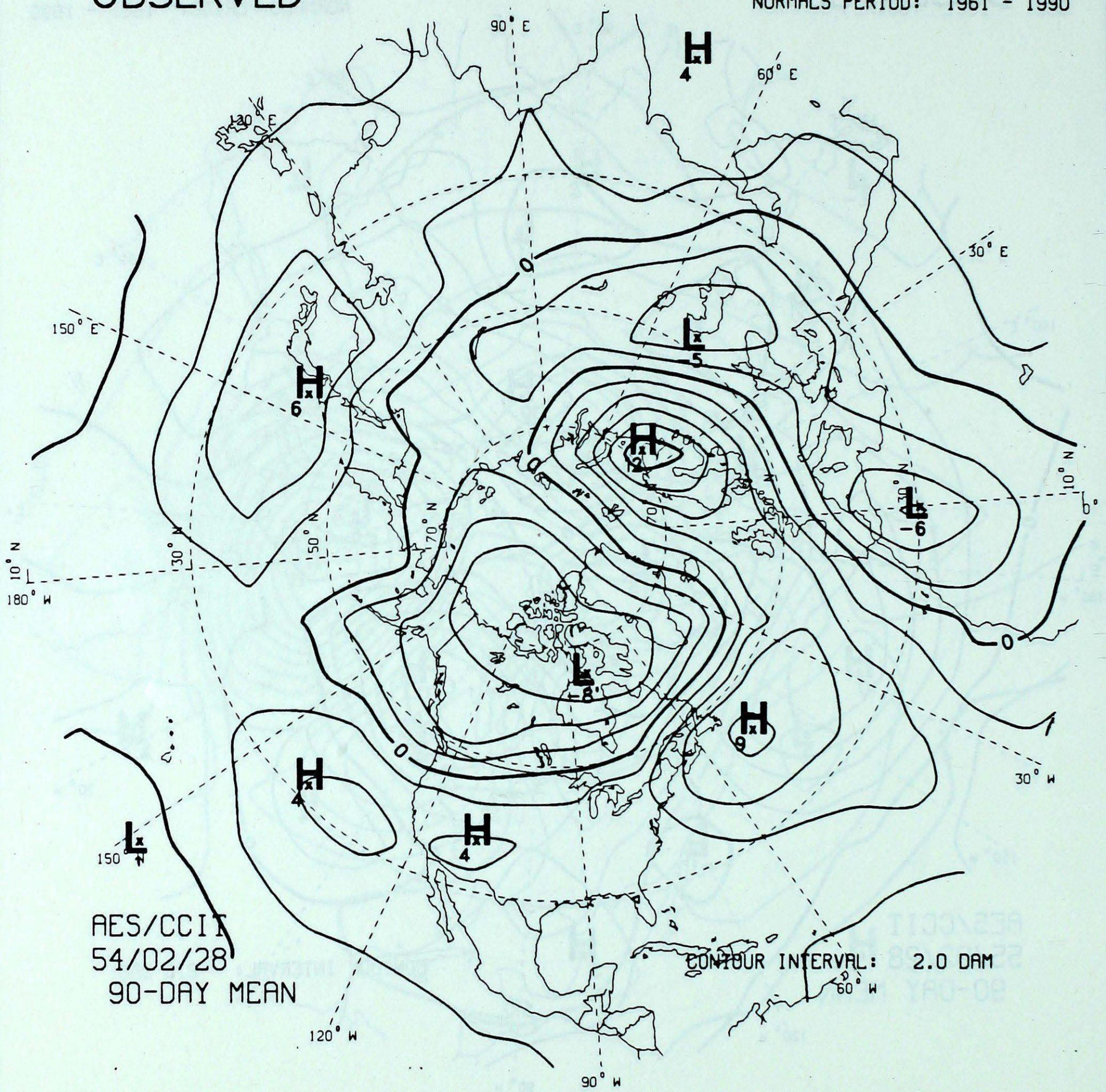
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 53 TO 28 FEB 54
90-DAY MEAN

OBSERVED

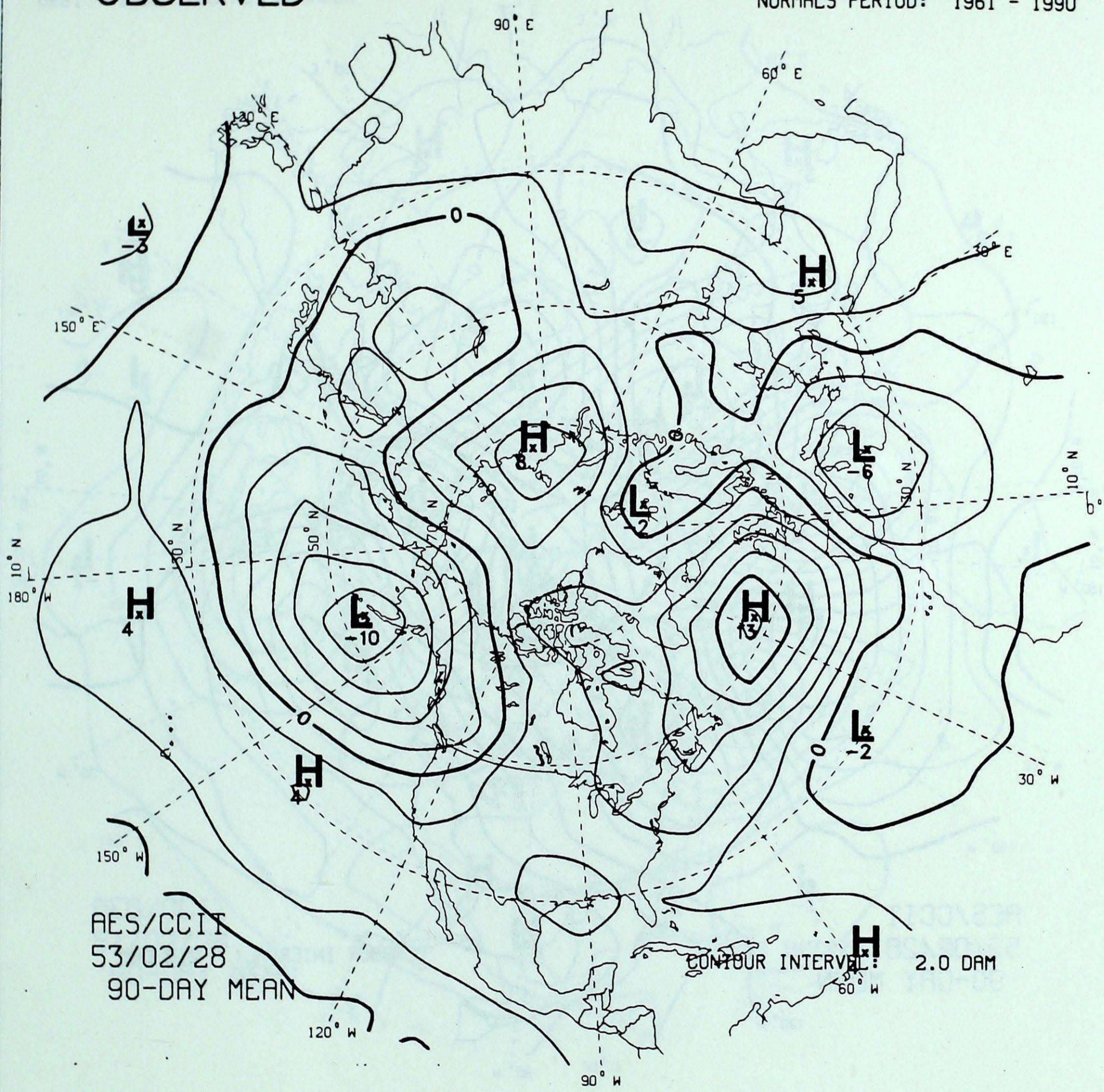
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 52 TO 28 FEB 53
90-DAY MEAN

OBSERVED

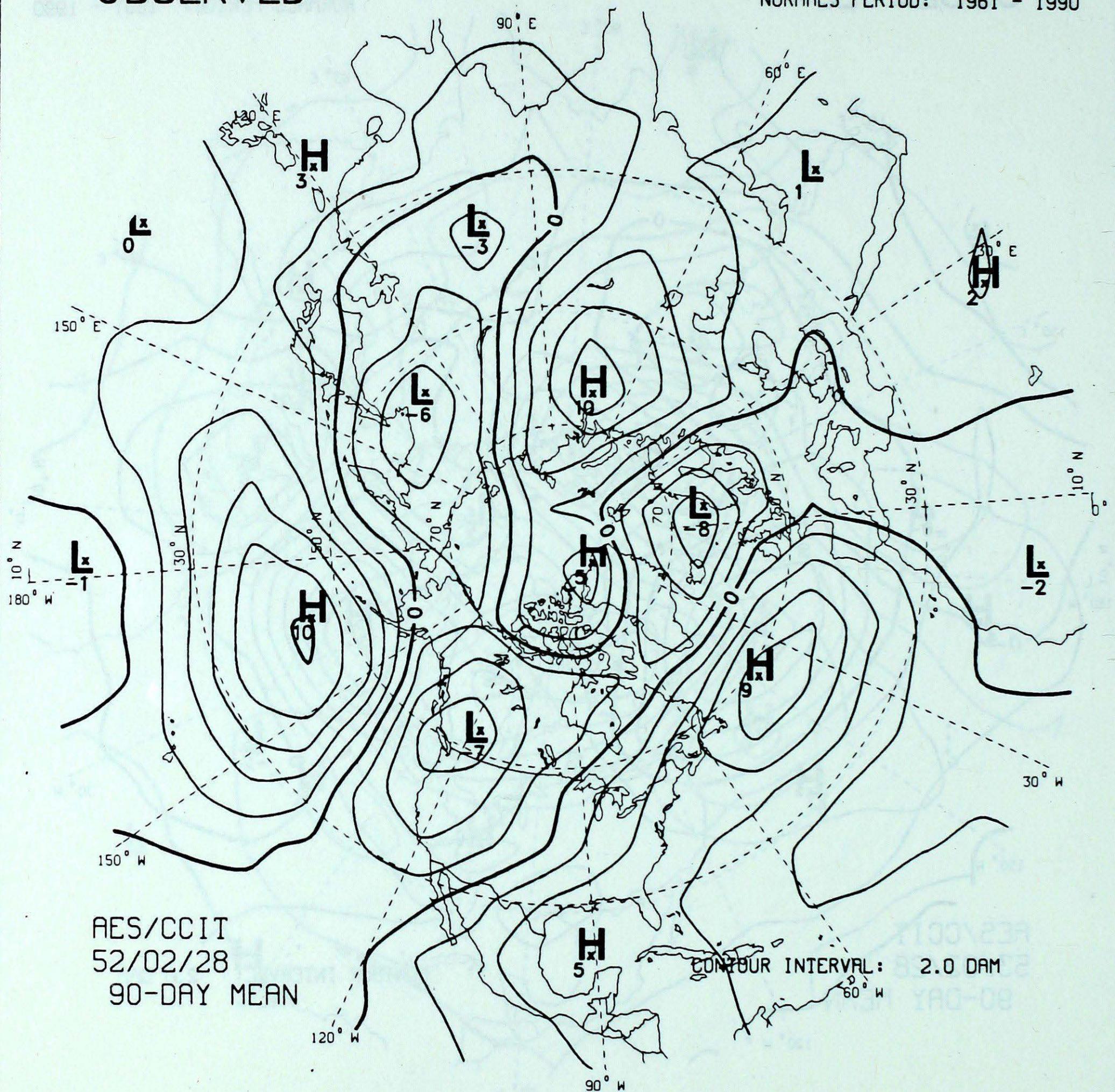
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 51 TO 28 FEB 52
90-DAY MEAN

OBSERVED

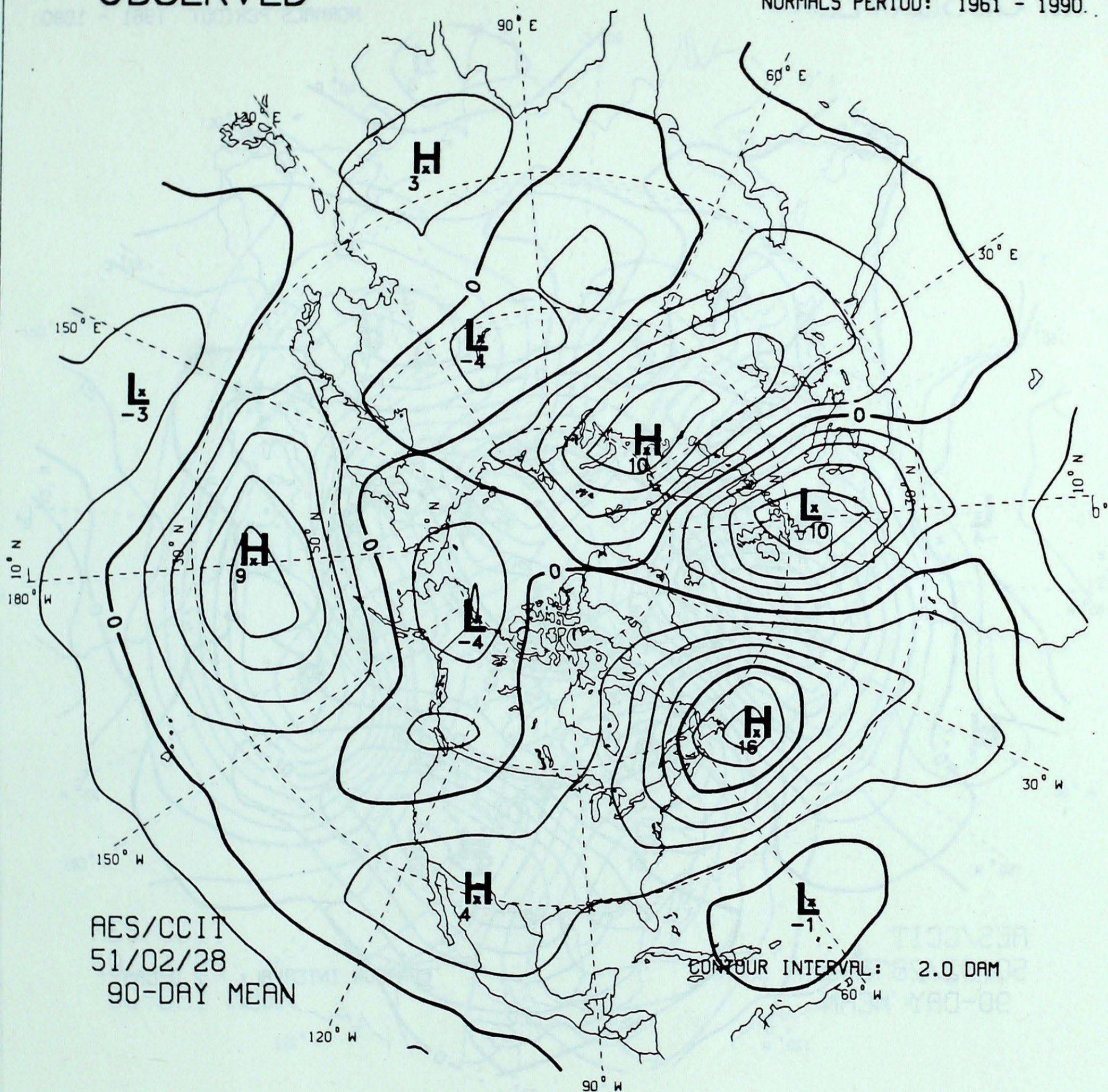
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 50 TO 28 FEB 51
90-DAY MEAN

OBSERVED

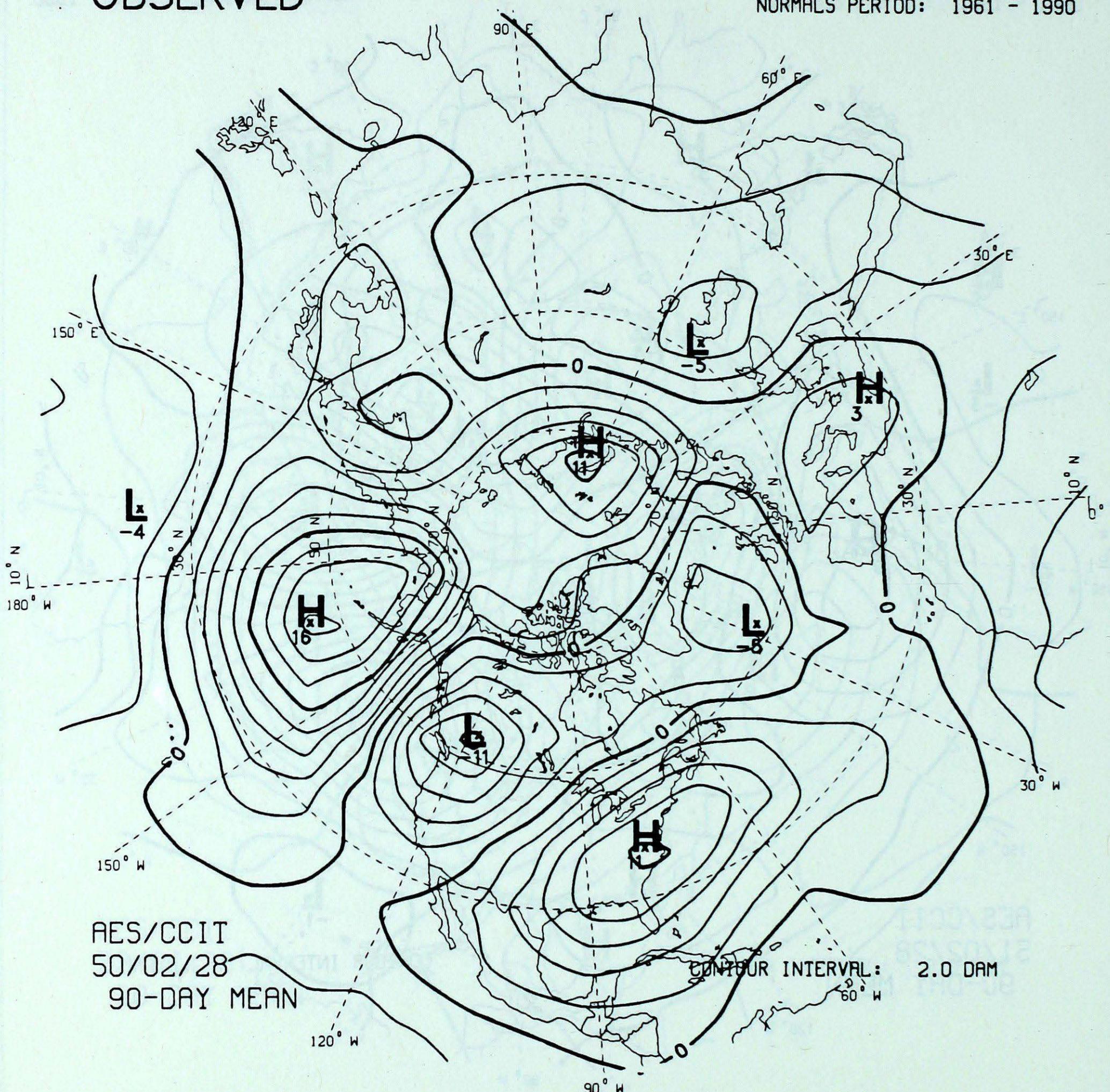
NORMALS PERIOD: 1961 - 1990.



50 KPA HEIGHT ANOMALY
01 DEC 49 TO 28 FEB 50
90-DAY MEAN

OBSERVED

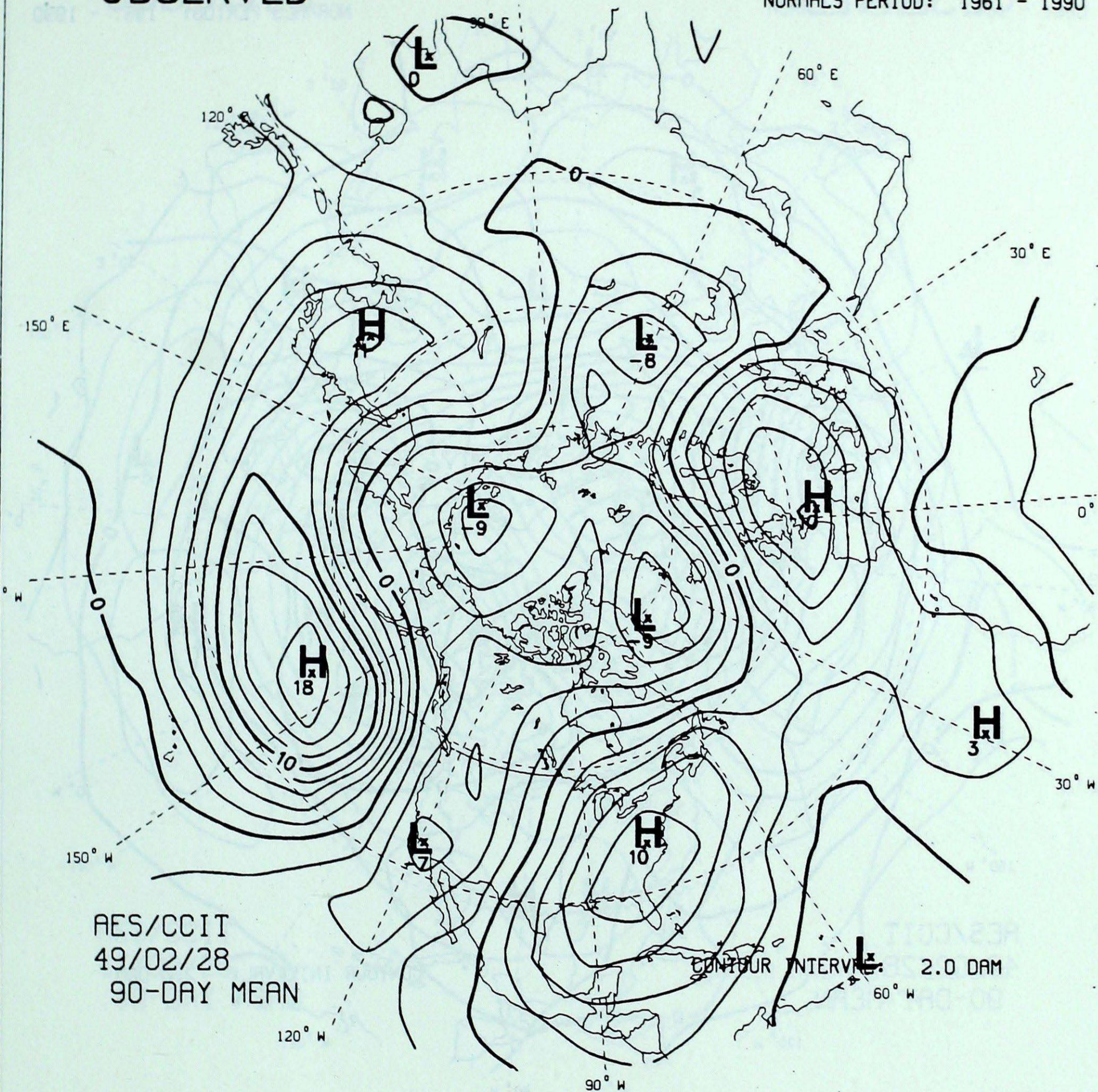
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 48 TO 28 FEB 49
90-DAY MEAN

OBSERVED

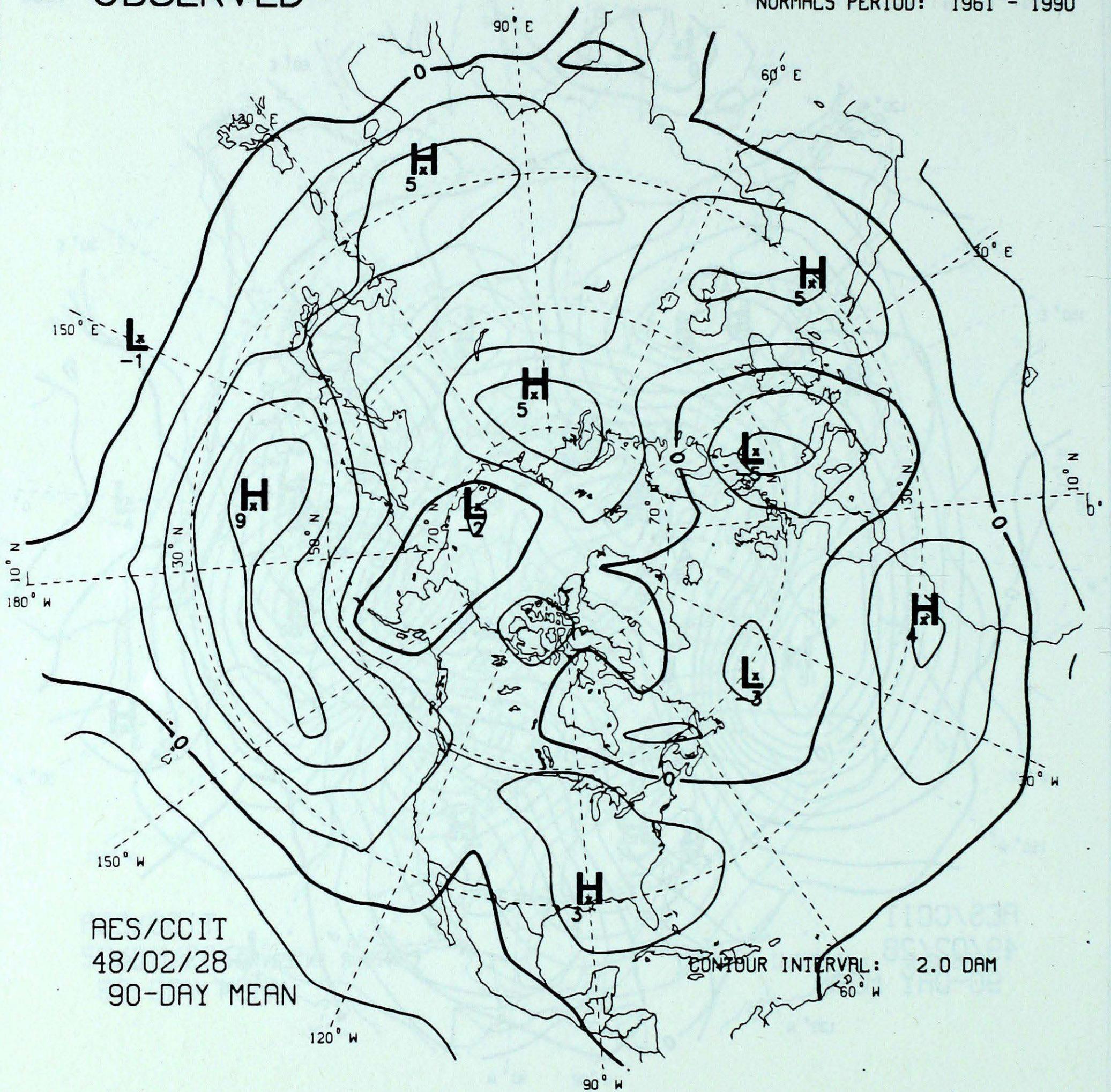
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 47 TO 28 FEB 48
90-DAY MEAN

OBSERVED

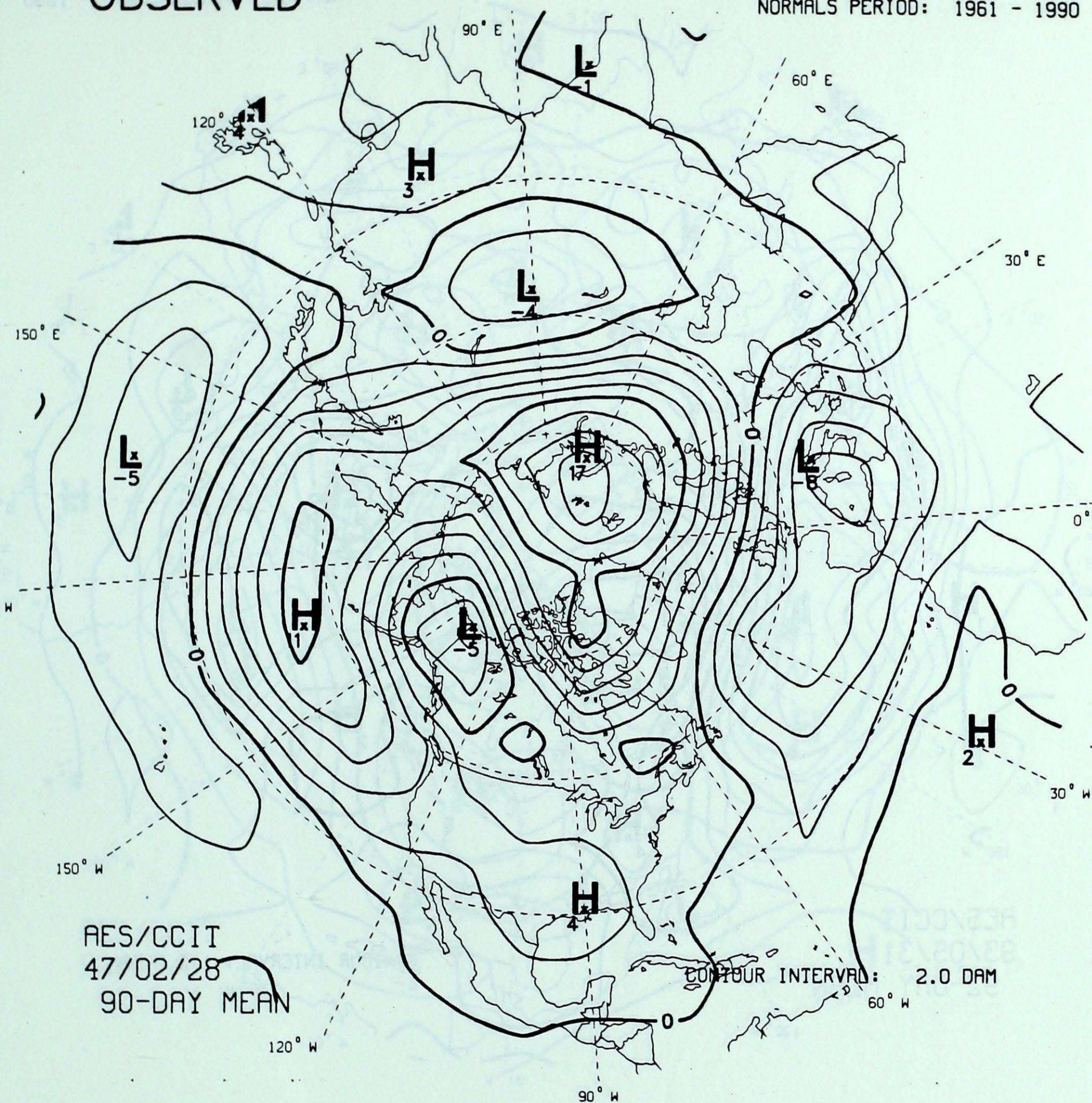
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 DEC 46 TO 28 FEB 47
90-DAY MEAN

OBSERVED

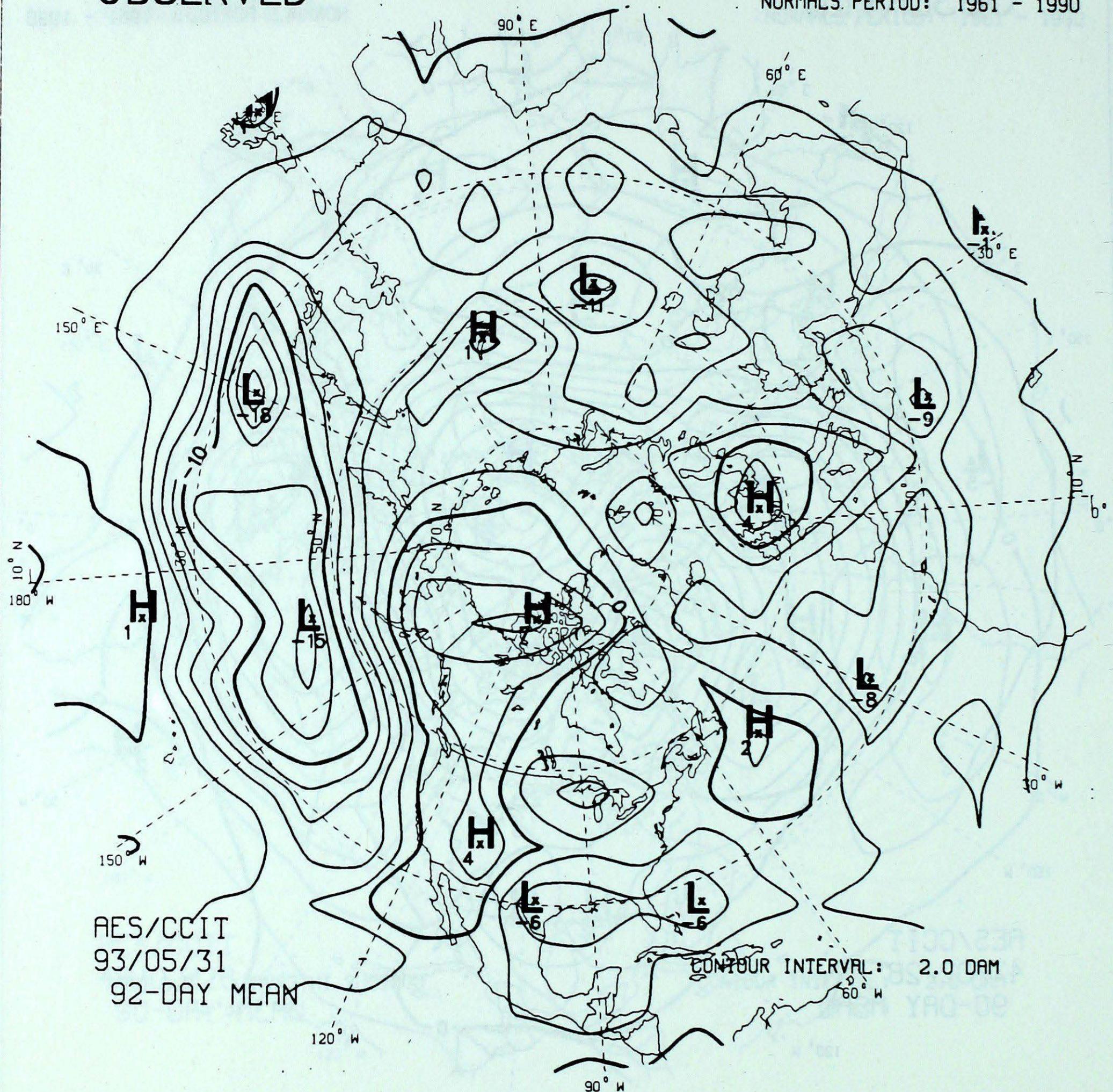
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 93 TO 31 MAY 93
92-DAY MEAN

OBSERVED

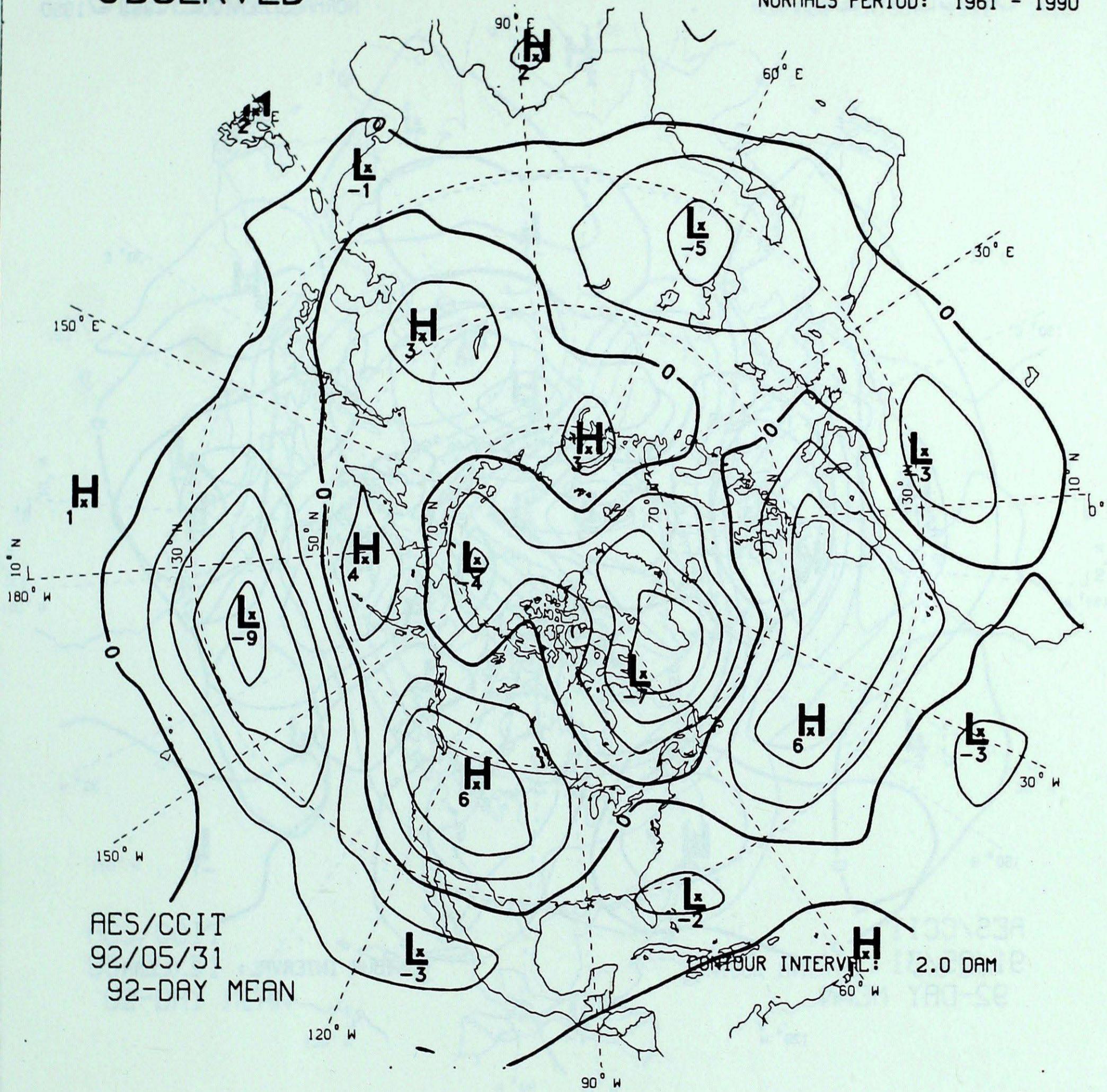
NORMALS. PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 92 TO 31 MAY 92
92-DAY MEAN

OBSERVED

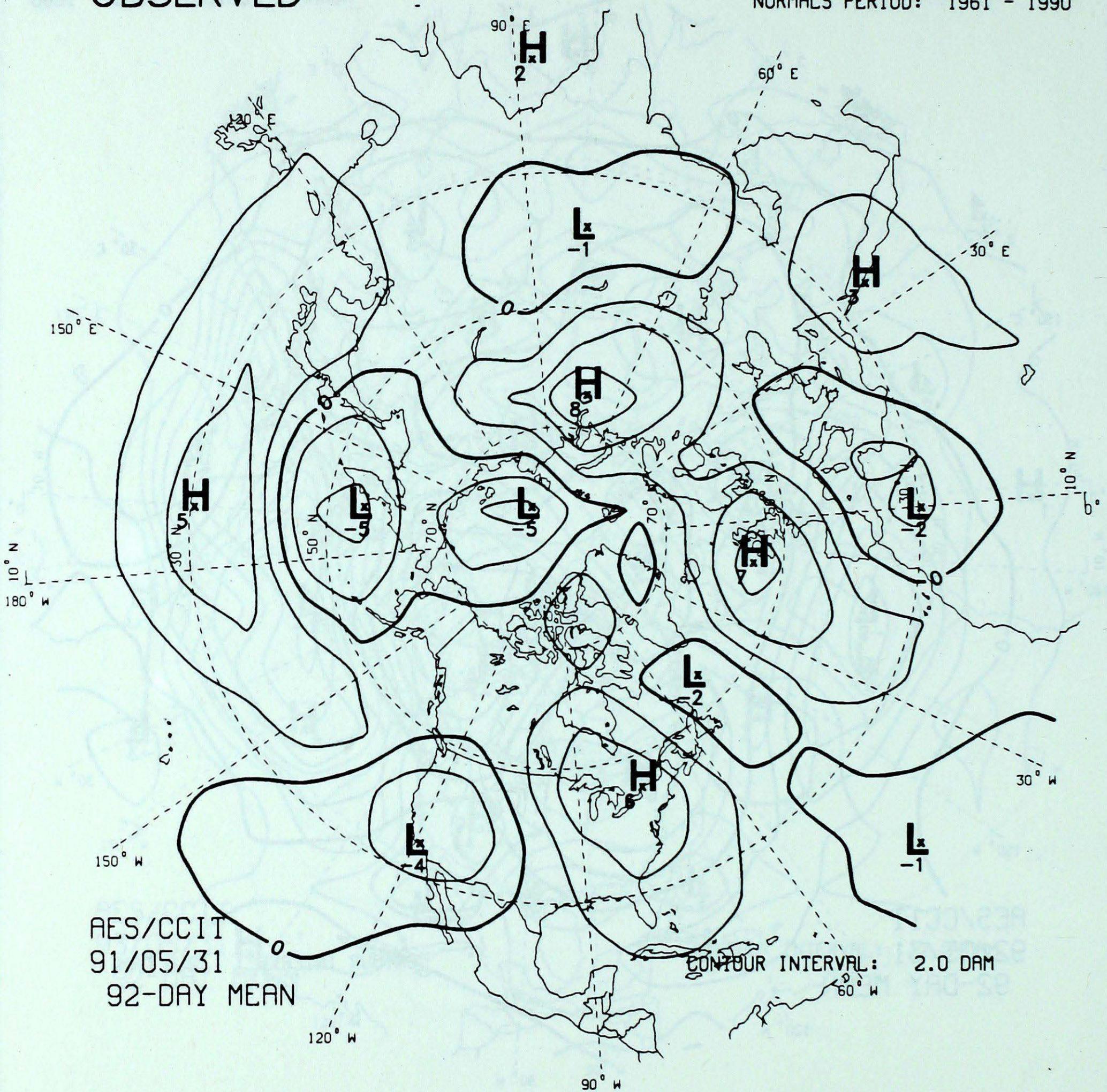
NORMALS PERIOD: 1961 - 1990



**50 KPA HEIGHT ANOMALY
01 MAR 91 TO 31 MAY 91
92-DAY MEAN**

OBSERVED

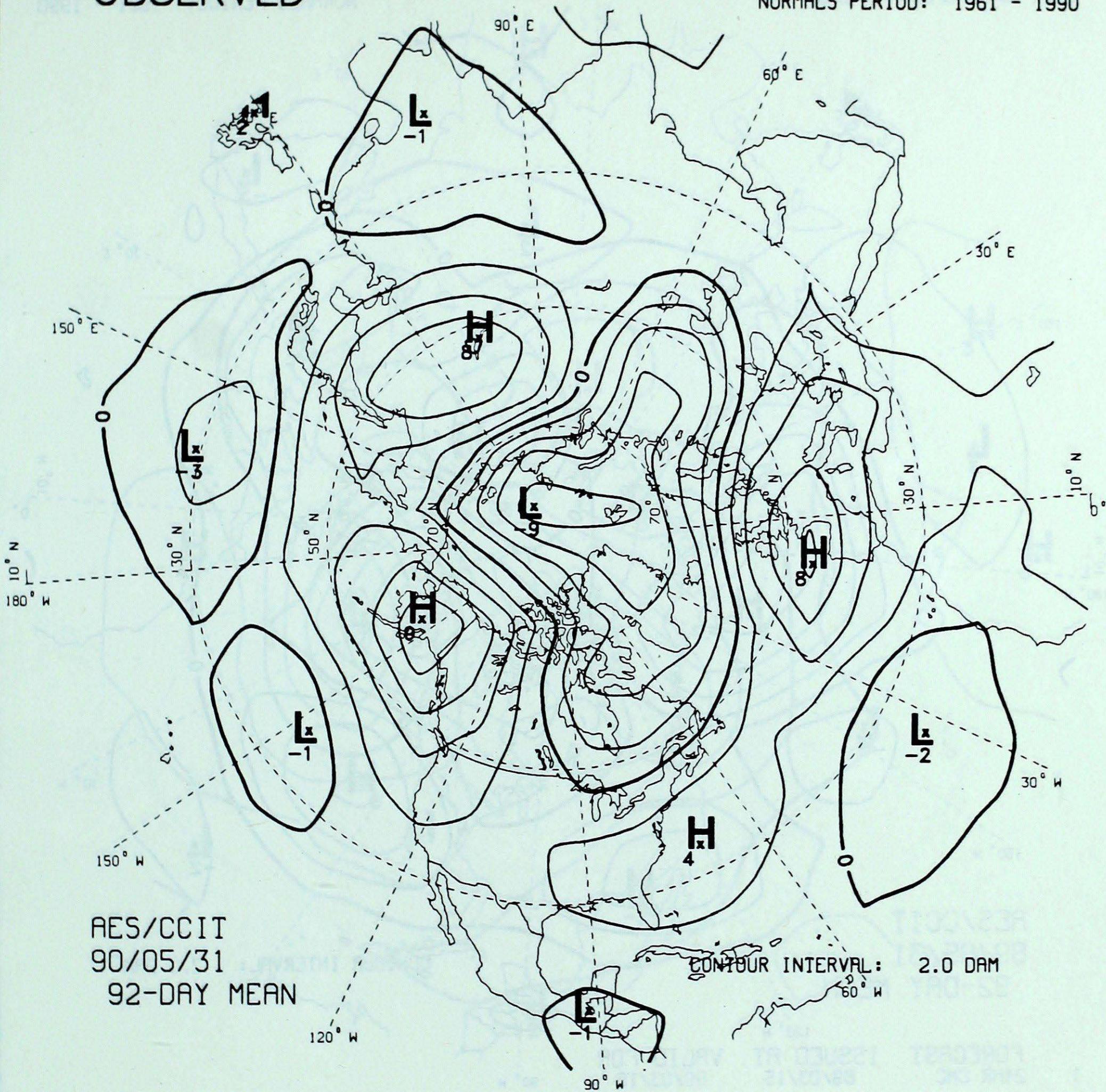
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 90 TO 31 MAY 90
92-DAY MEAN

OBSERVED

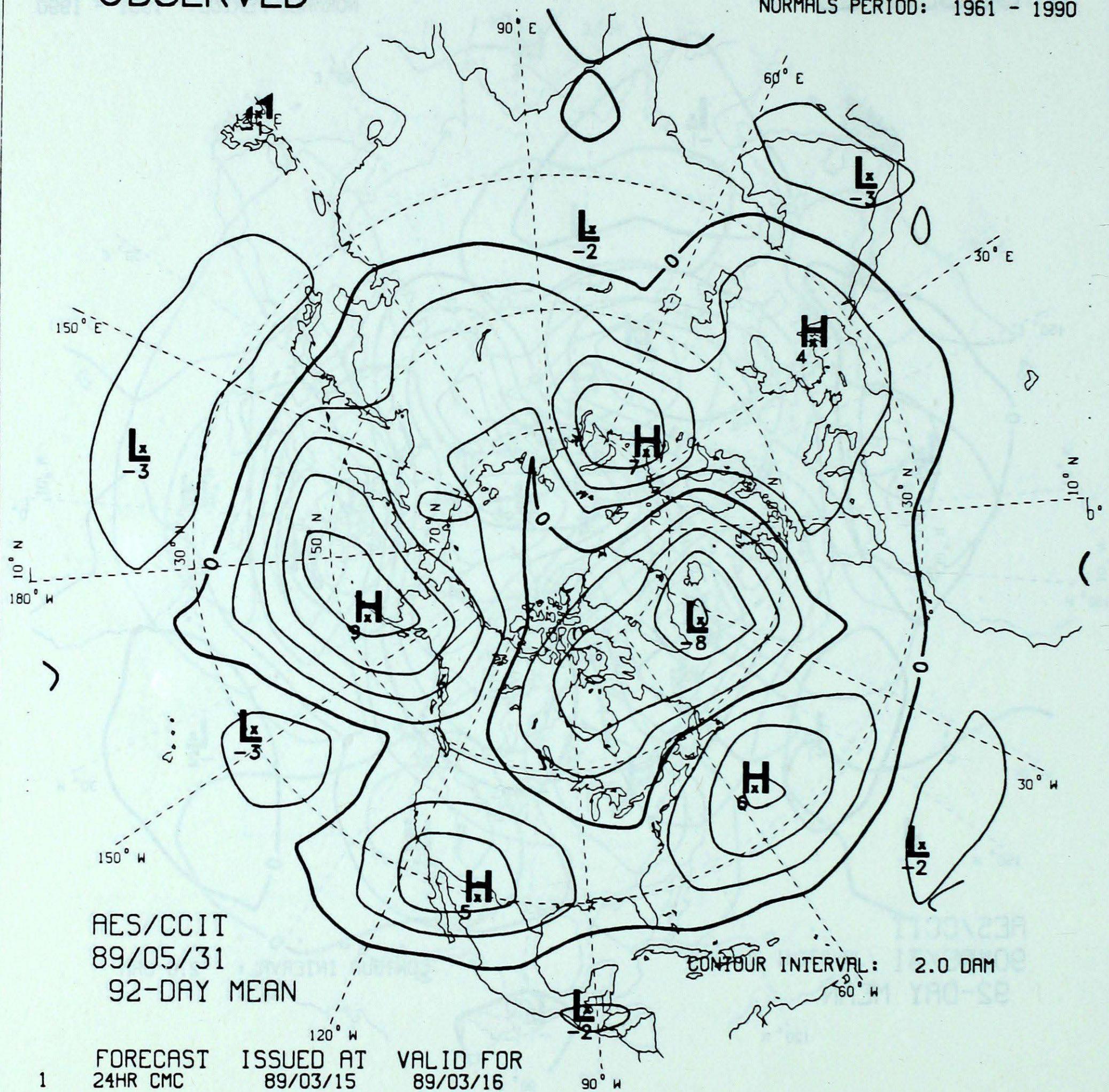
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 89 TO 31 MAY 89
92-DAY MEAN

OBSERVED

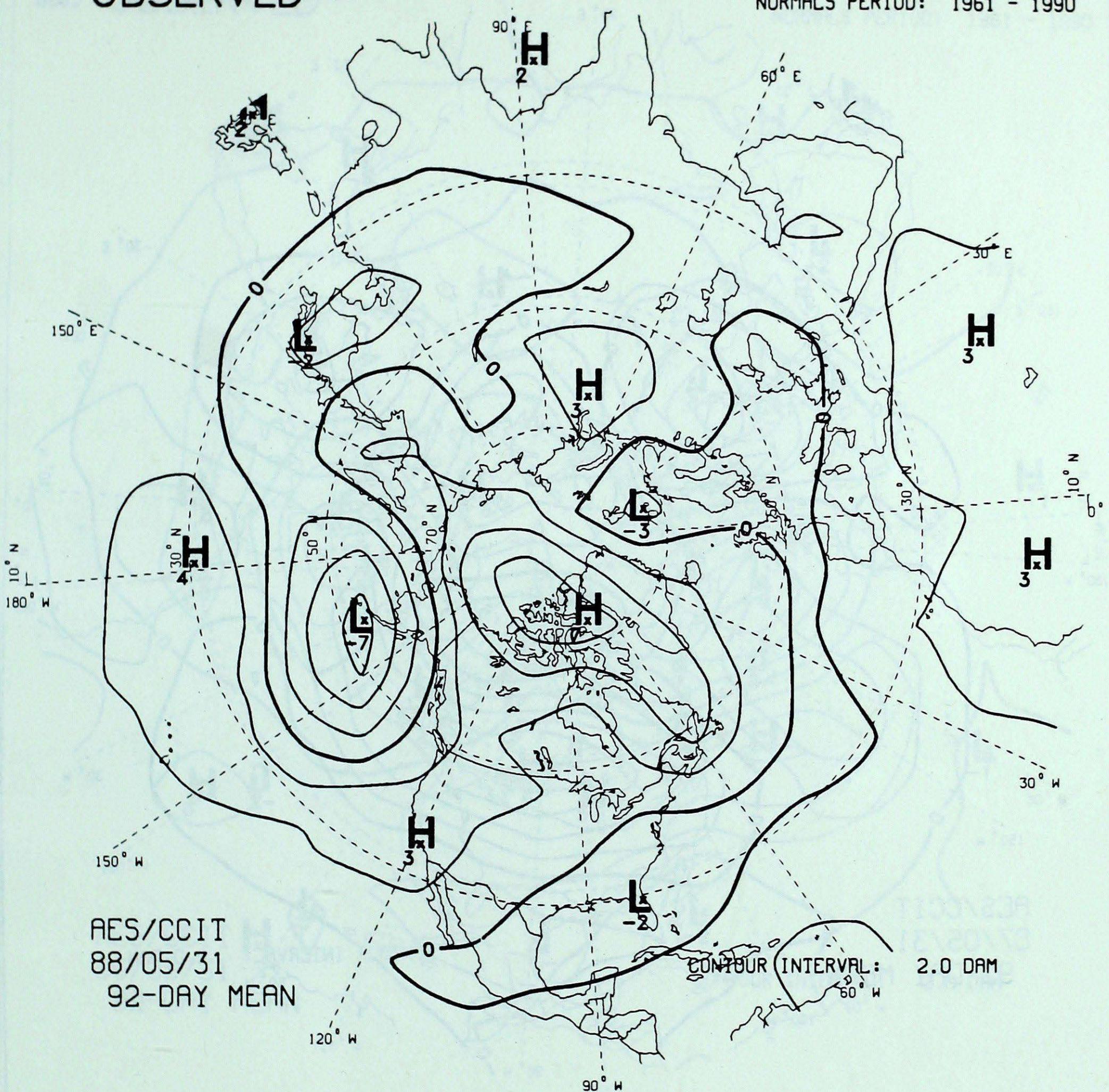
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 88 TO 31 MAY 88
92-DAY MEAN

OBSERVED

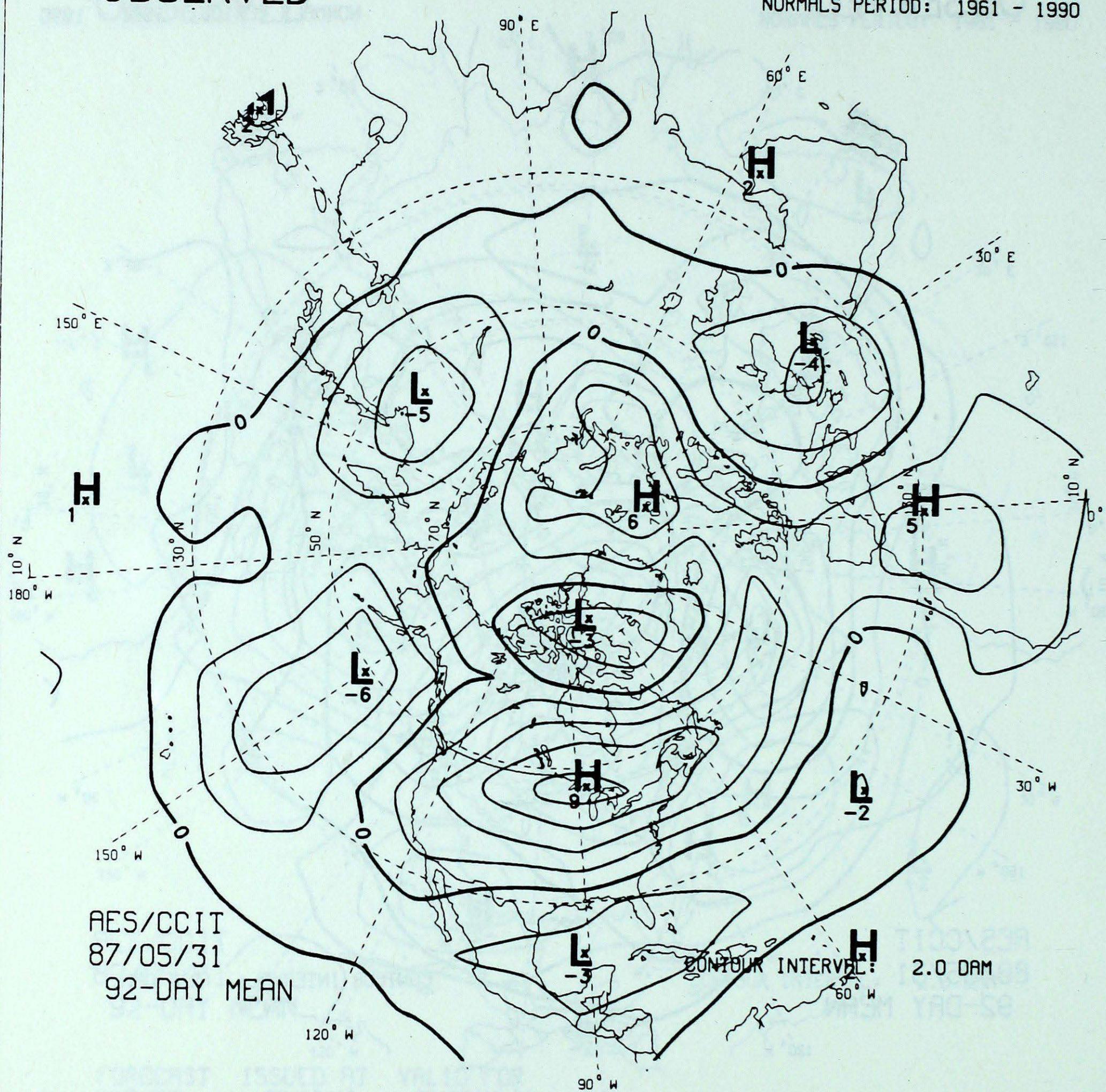
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 87 TO 31 MAY 87
92-DAY MEAN

OBSERVED

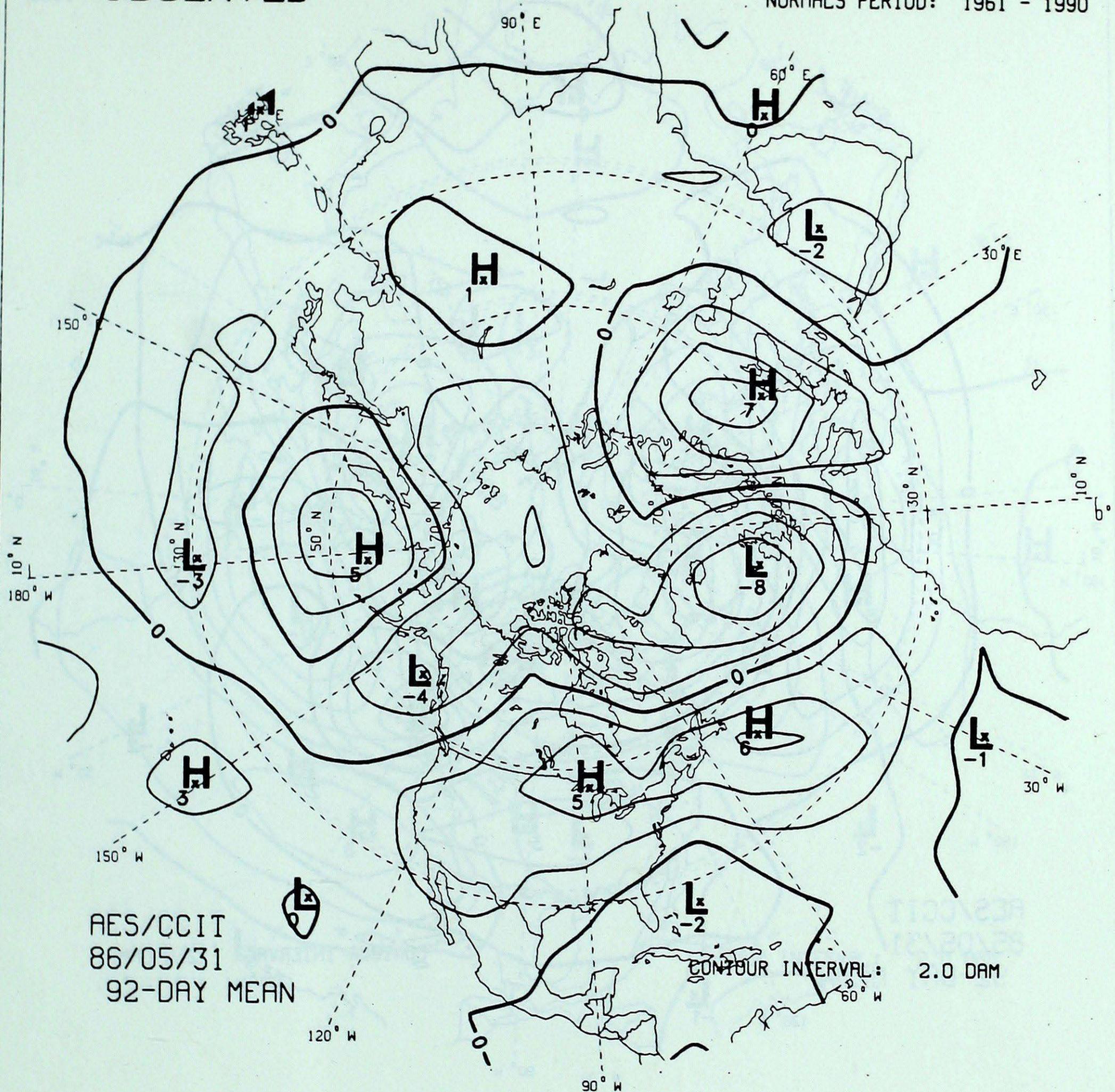
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 86 TO 31 MAY 86
92-DAY MEAN

OBSERVED

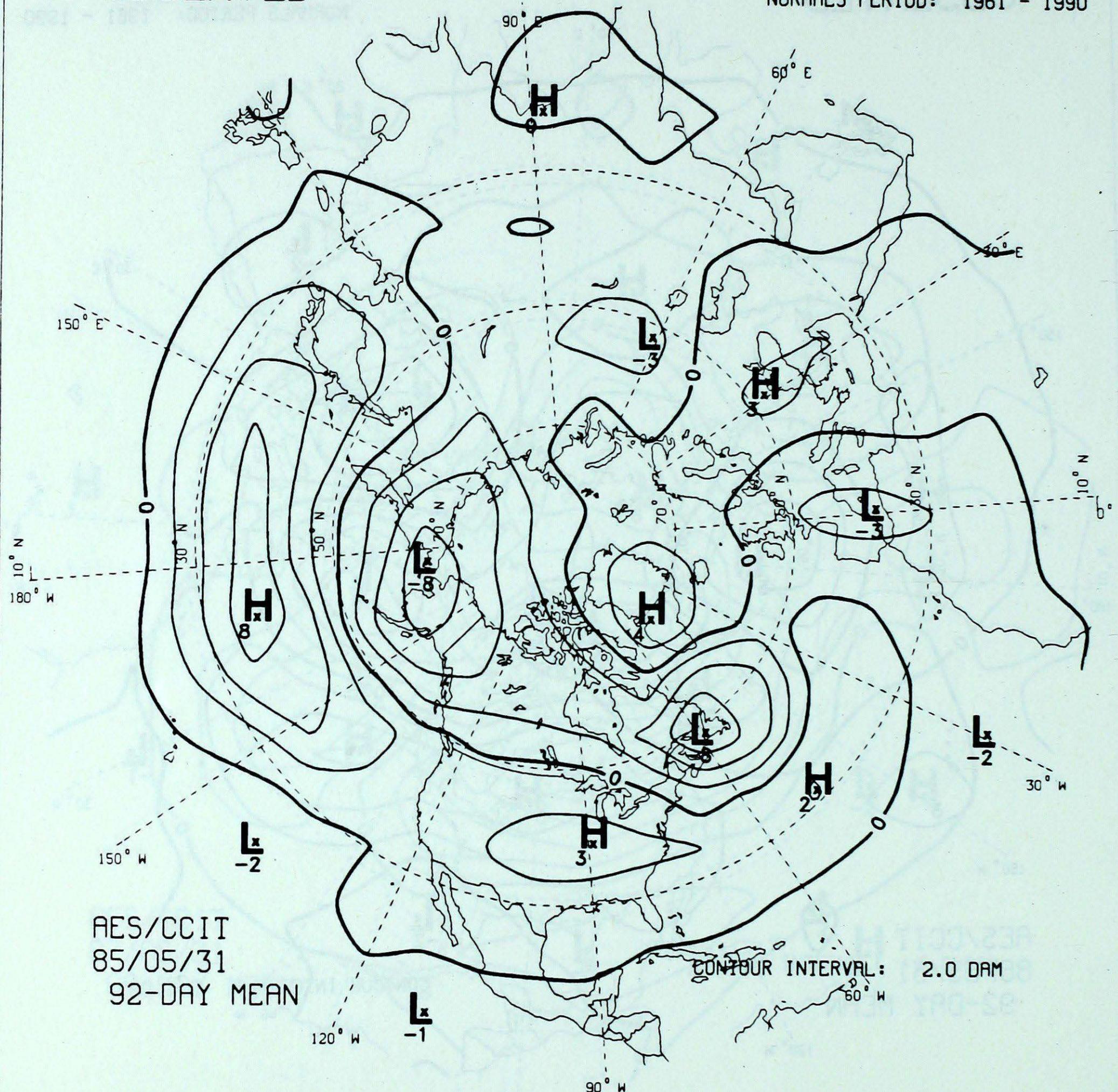
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 85 TO 31 MAY 85
92-DAY MEAN

OBSERVED

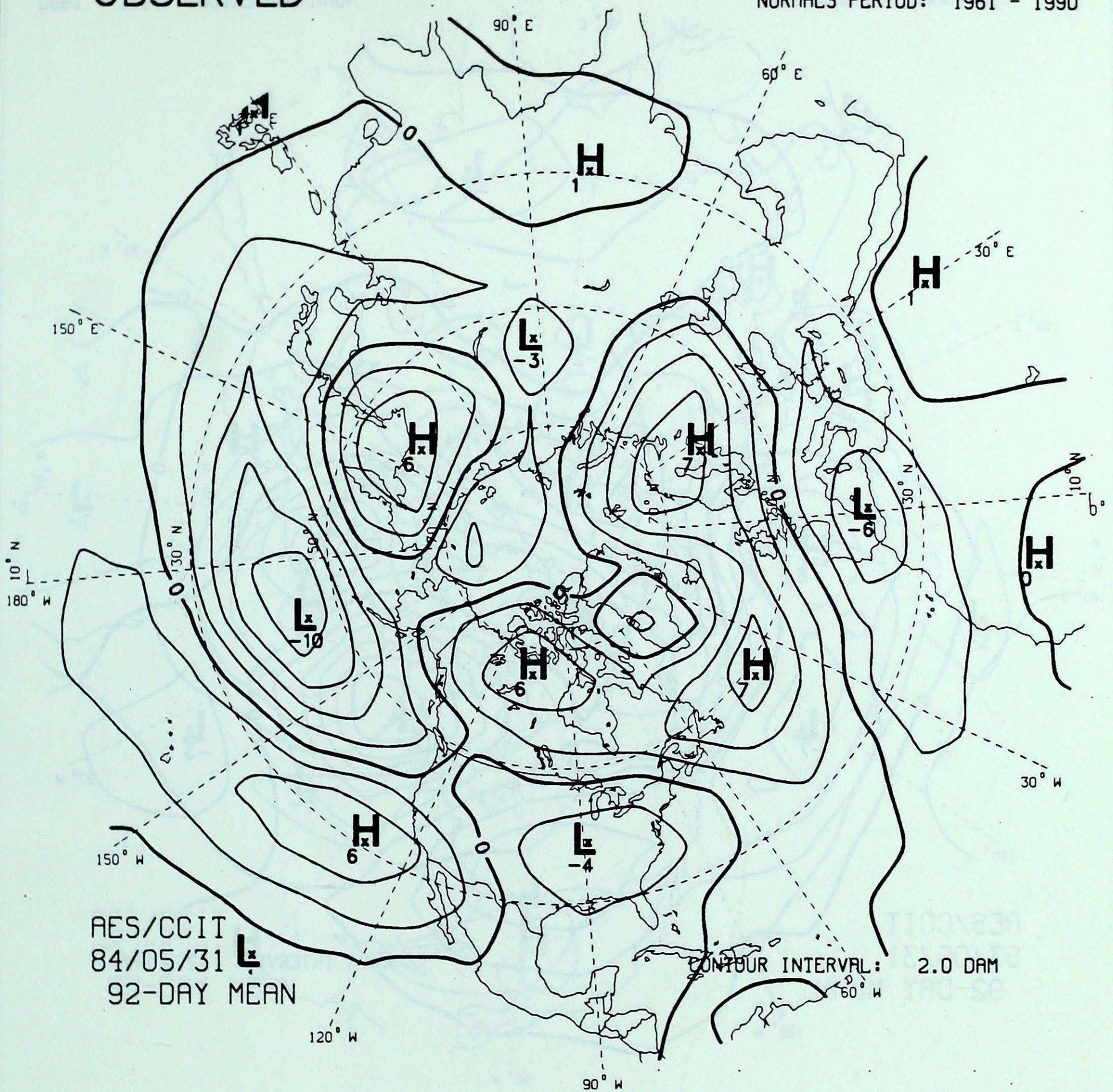
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 84 TO 31 MAY 84
92-DAY MEAN

OBSERVED

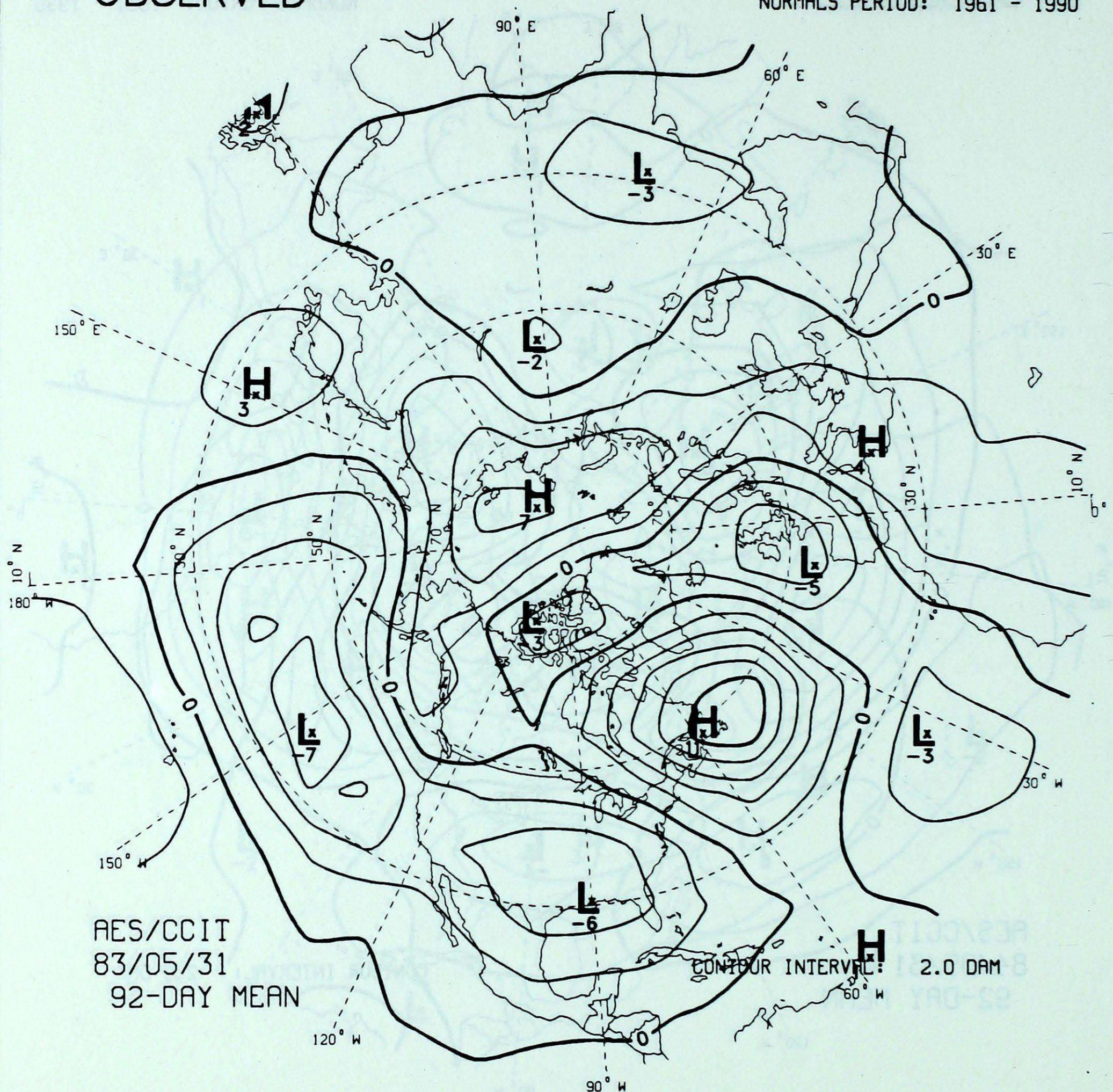
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 83 TO 31 MAY 83
92-DAY MEAN

OBSERVED

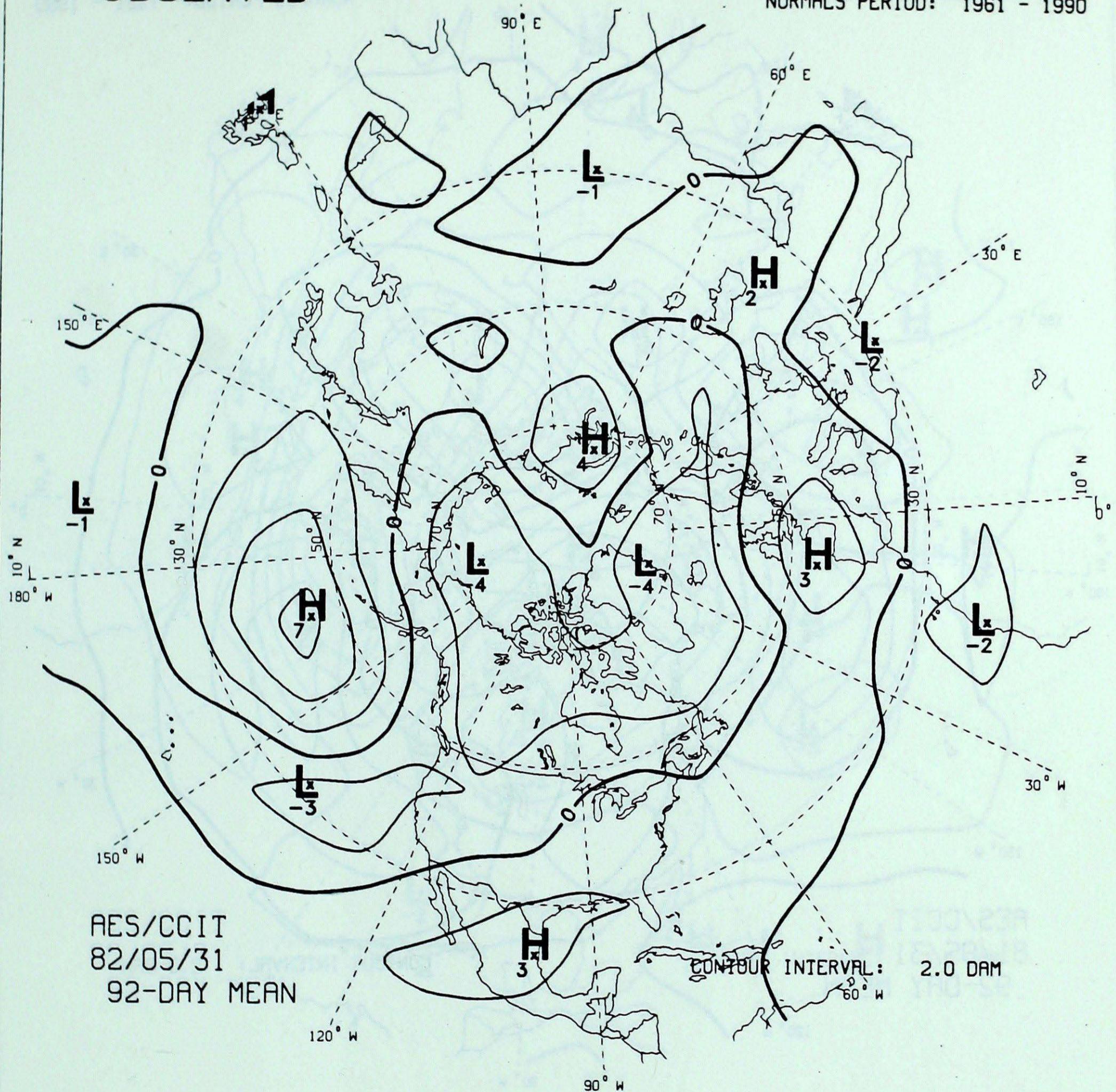
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 82 TO 31 MAY 82
92-DAY MEAN

OBSERVED

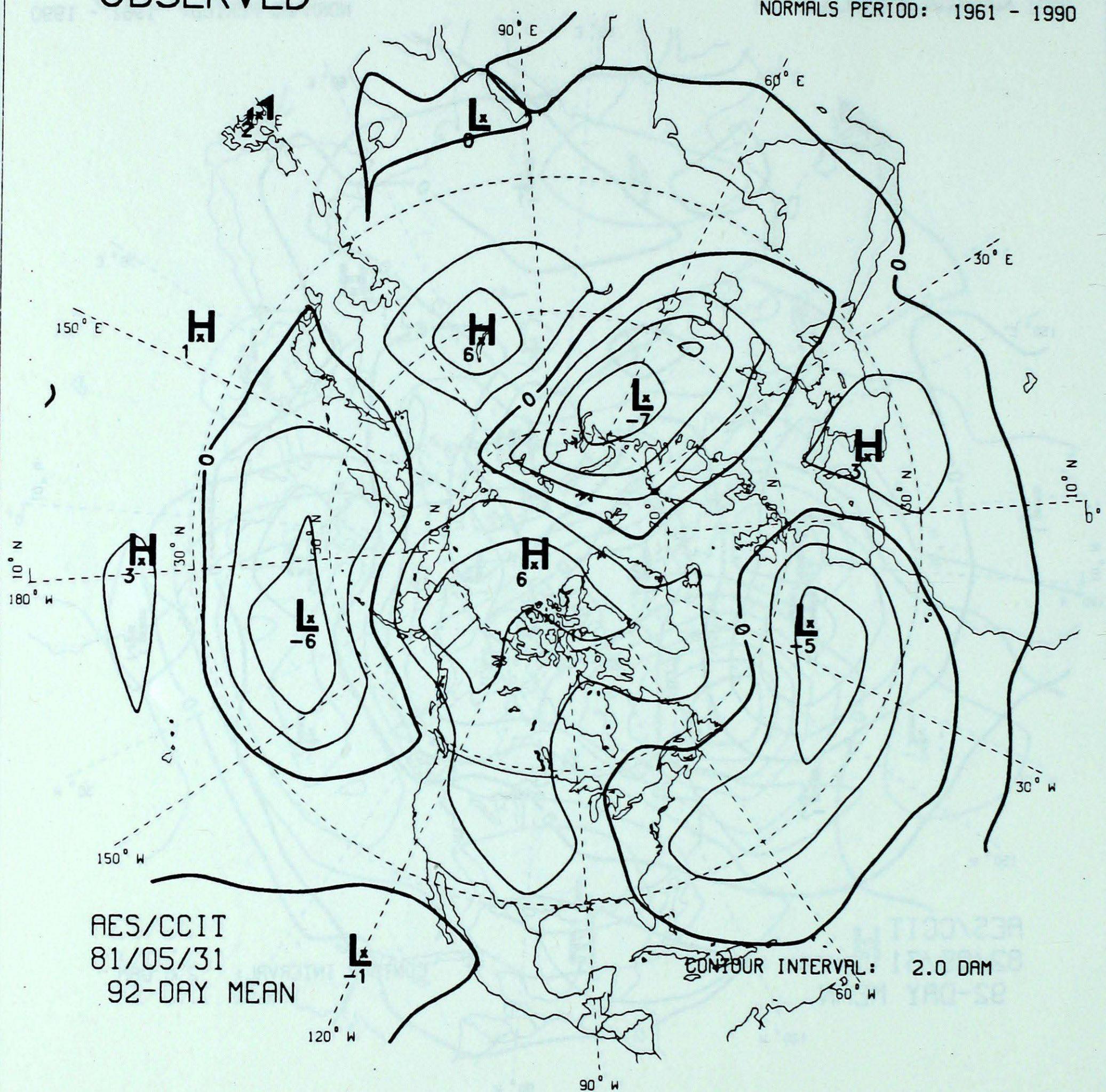
NORMALS PERIOD: 1961 - 1990



**50 KPA HEIGHT ANOMALY
01 MAR 81 TO 31 MAY 81
92-DAY MEAN**

OBSERVED

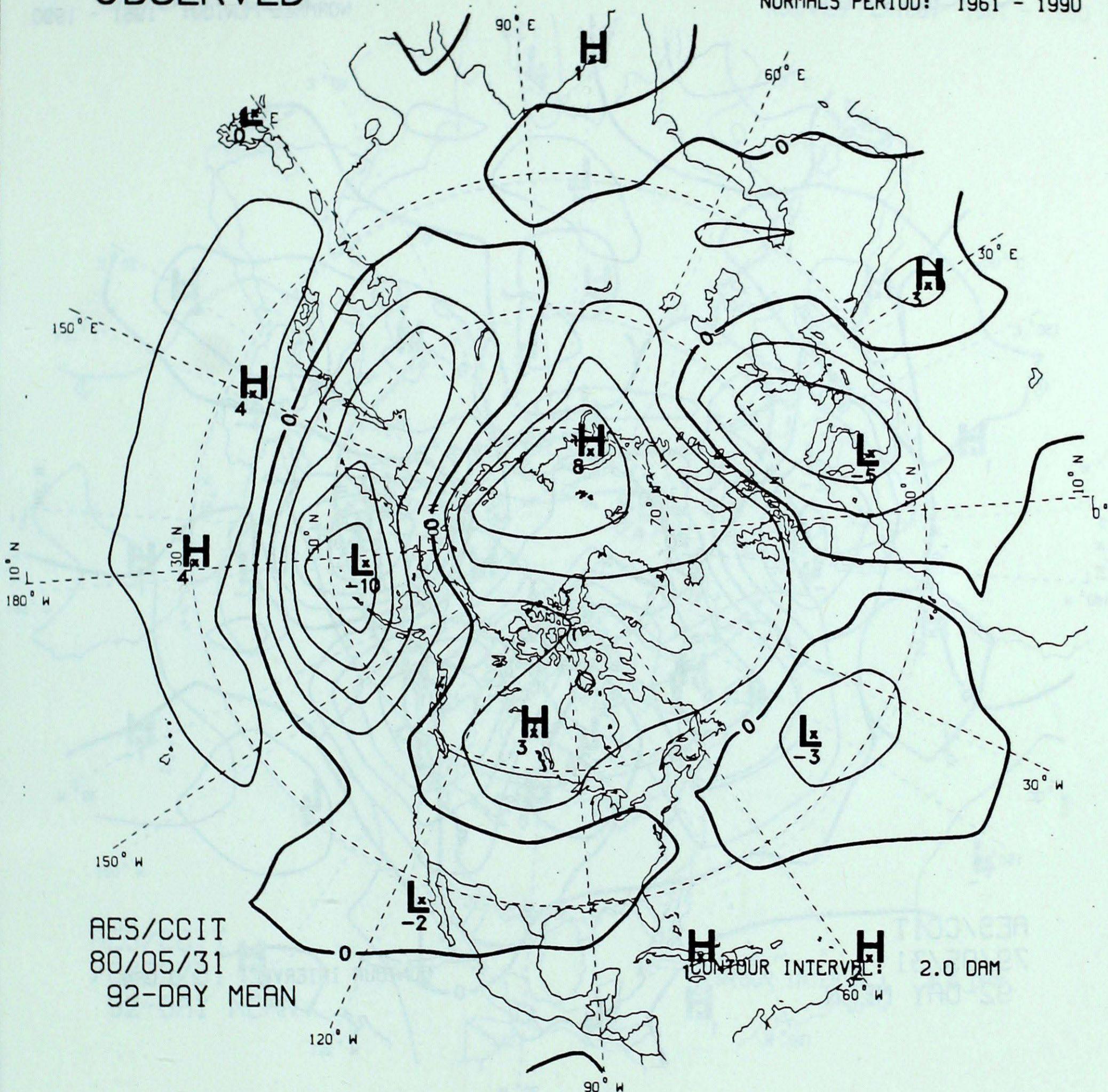
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 80 TO 31 MAY 80
92-DAY MEAN

OBSERVED

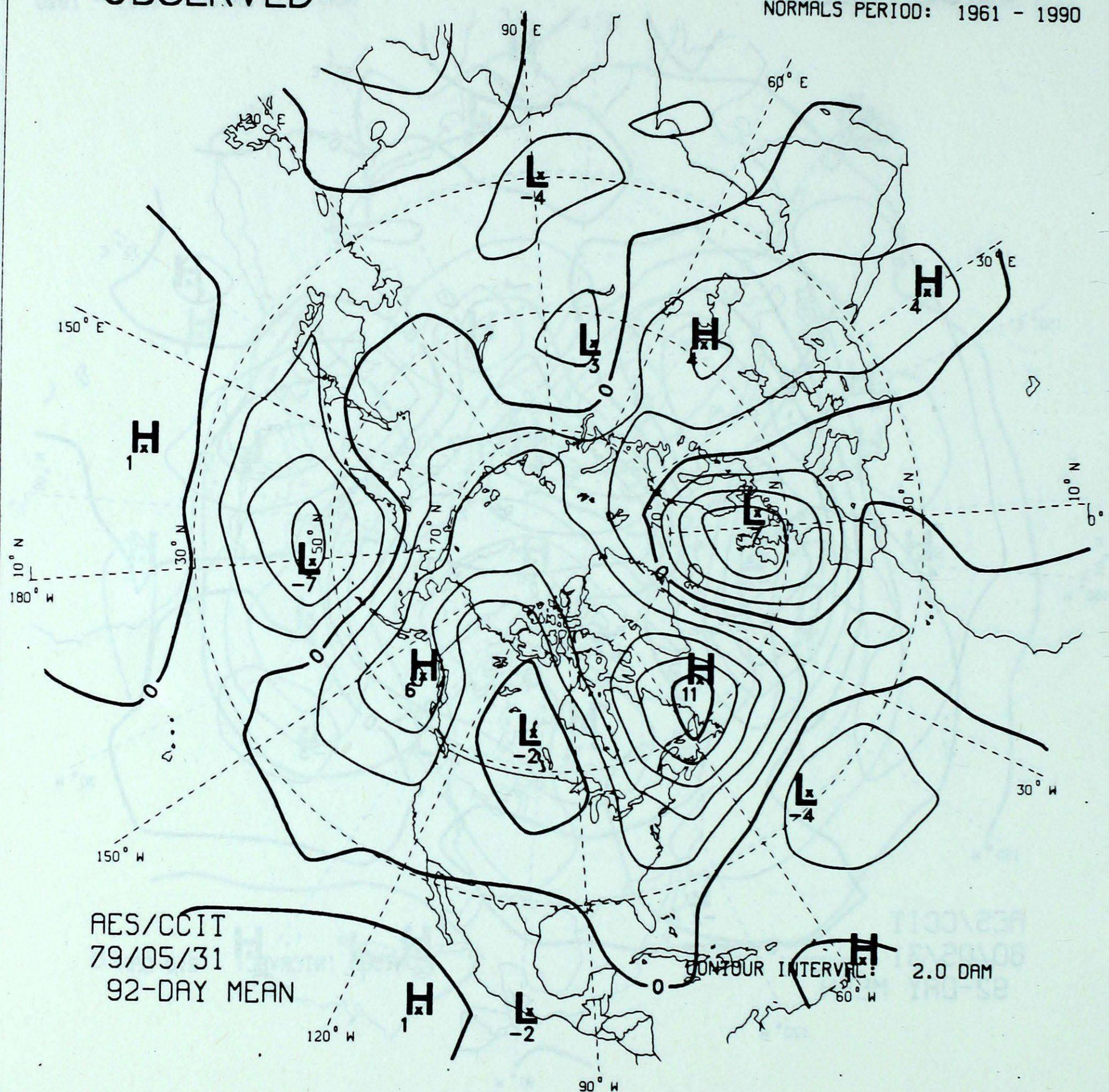
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 79 TO 31 MAY 79
92-DAY MEAN

OBSERVED

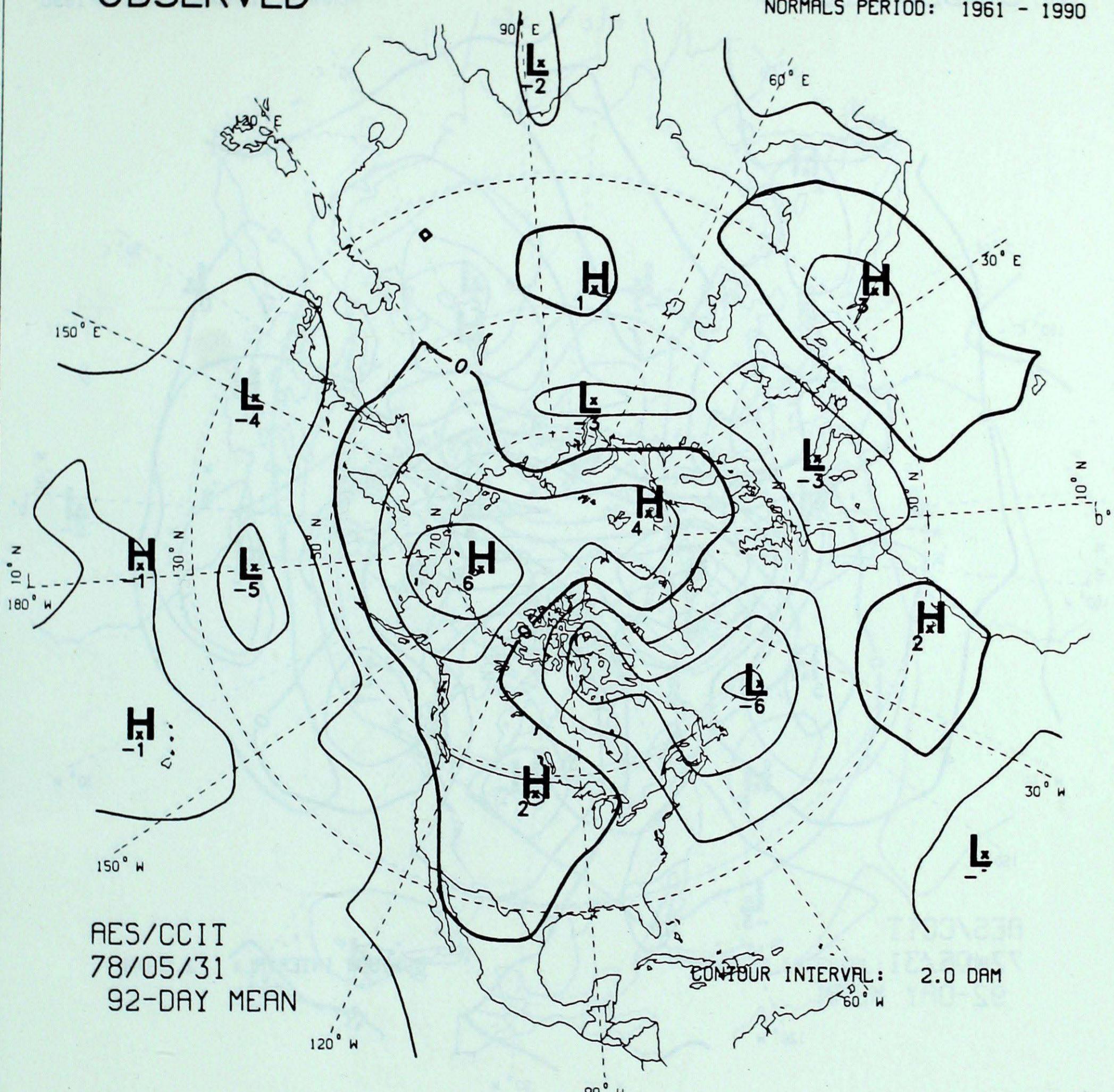
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 78 TO 31 MAY 78
92-DAY MEAN

OBSERVED

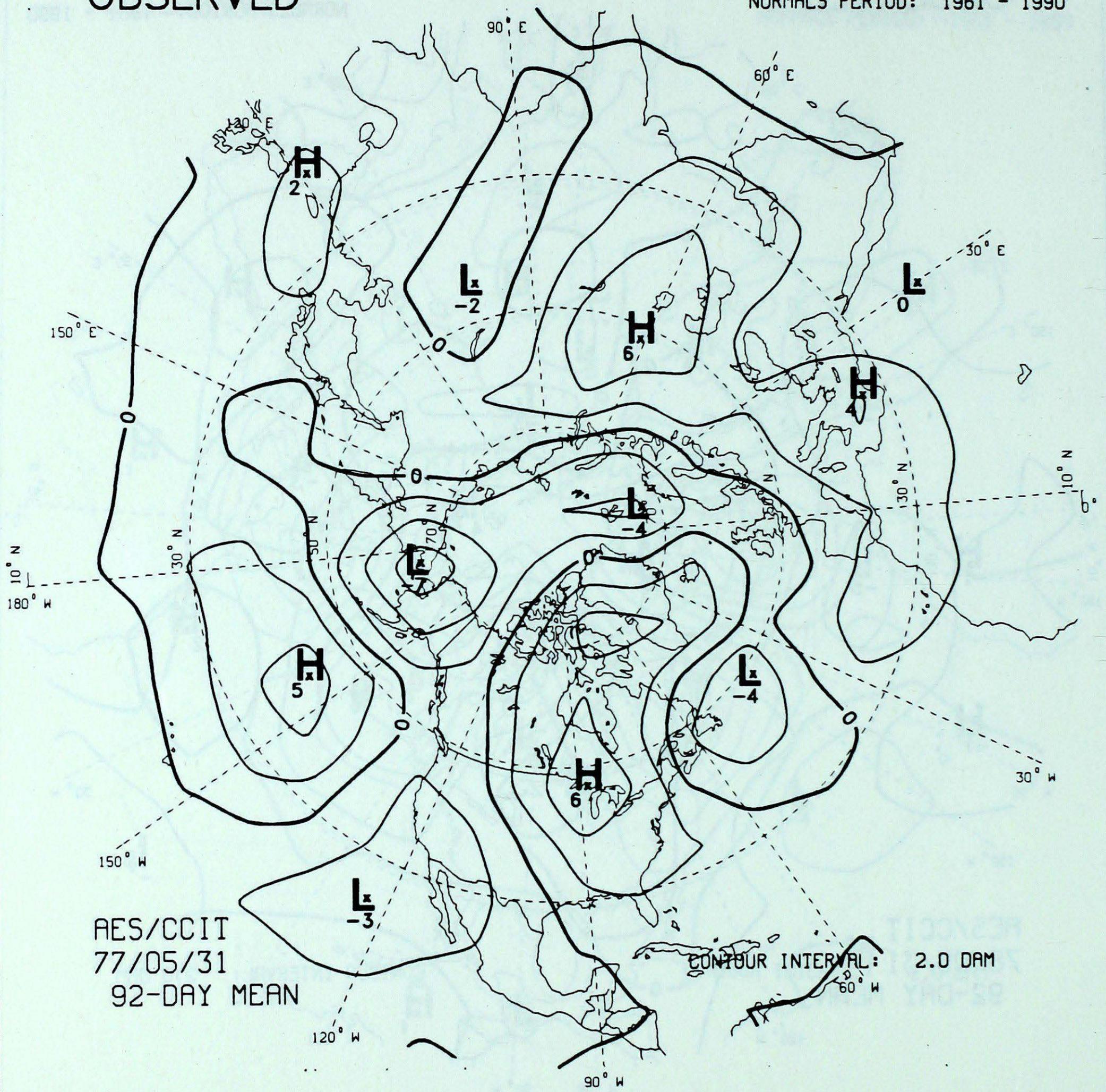
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 77 TO 31 MAY 77
92-DAY MEAN

OBSERVED

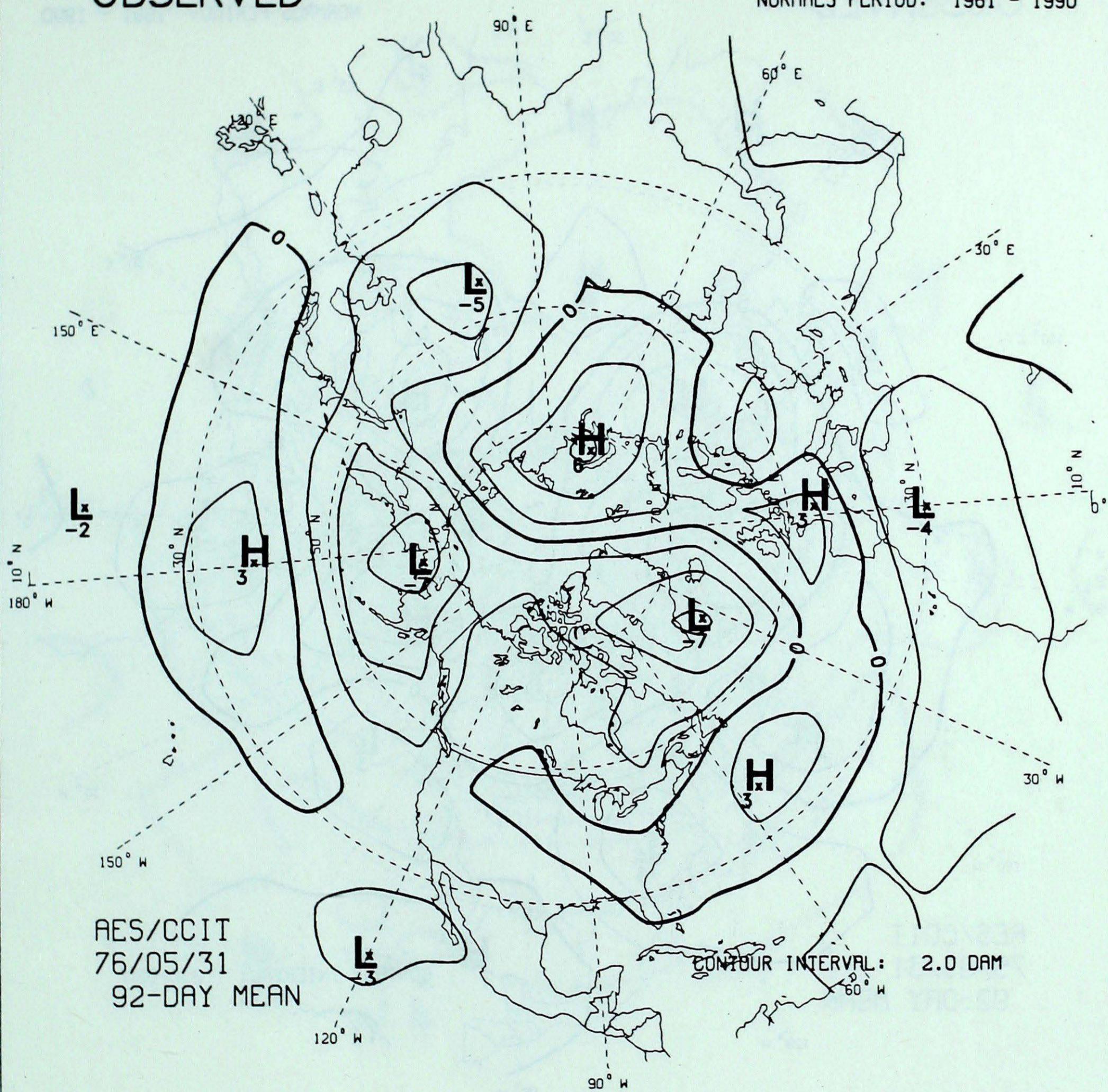
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 76 TO 31 MAY 76
92-DAY MEAN

OBSERVED

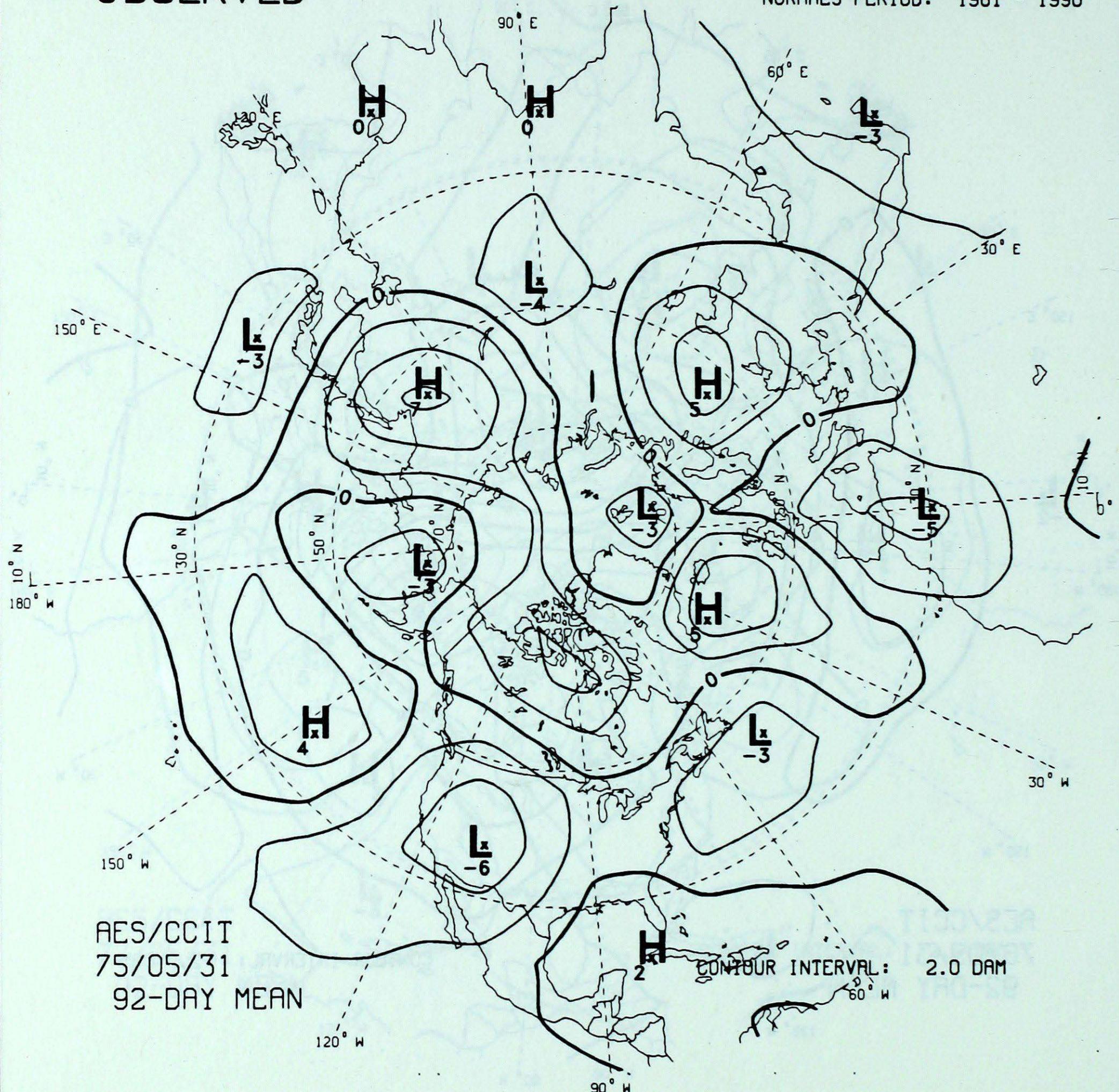
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 75 TO 31 MAY 75
92-DAY MEAN

OBSERVED

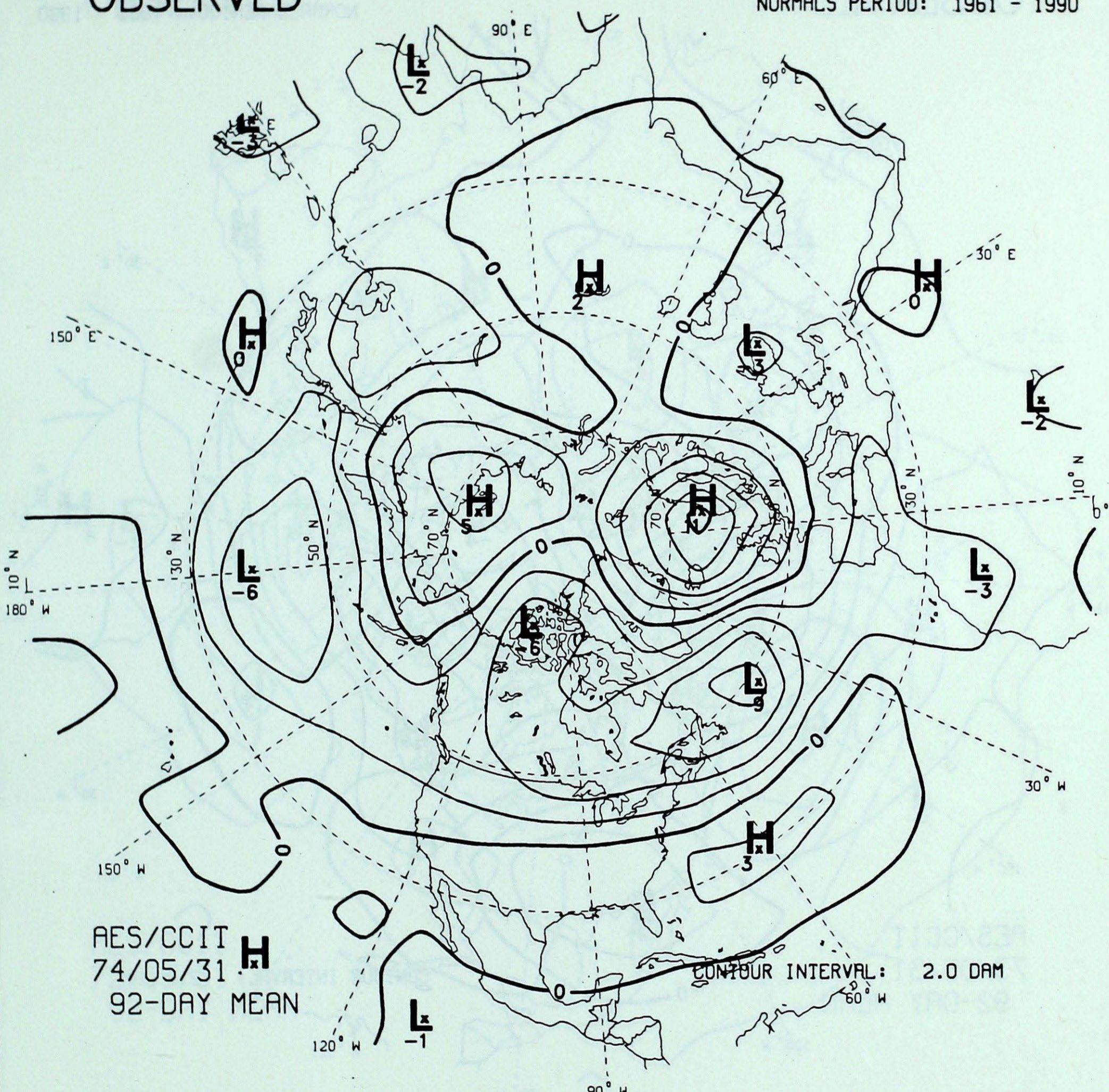
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 74 TO 31 MAY 74
92-DAY MEAN

OBSERVED

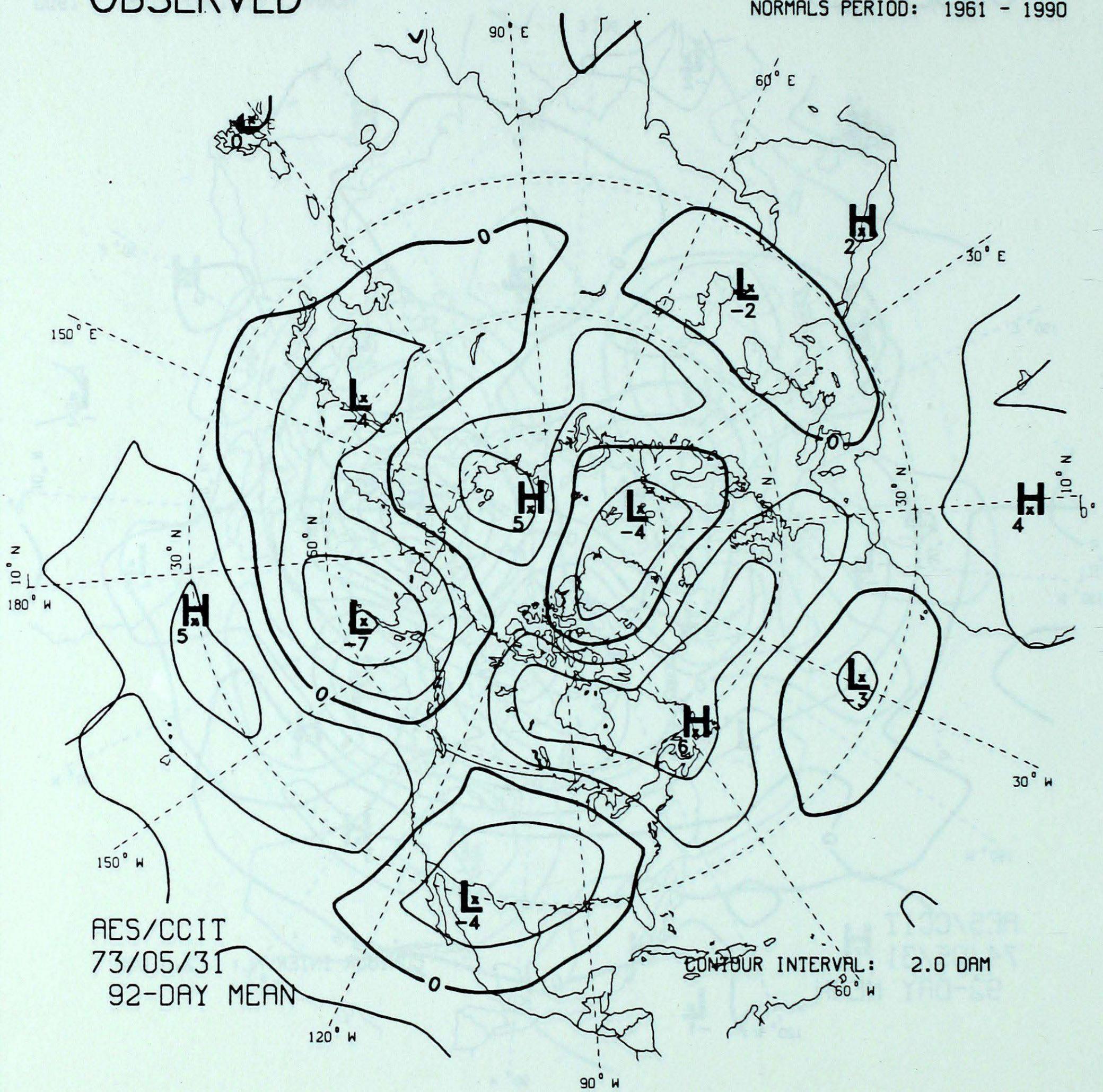
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 73 TO 31 MAY 73
92-DAY MEAN

OBSERVED

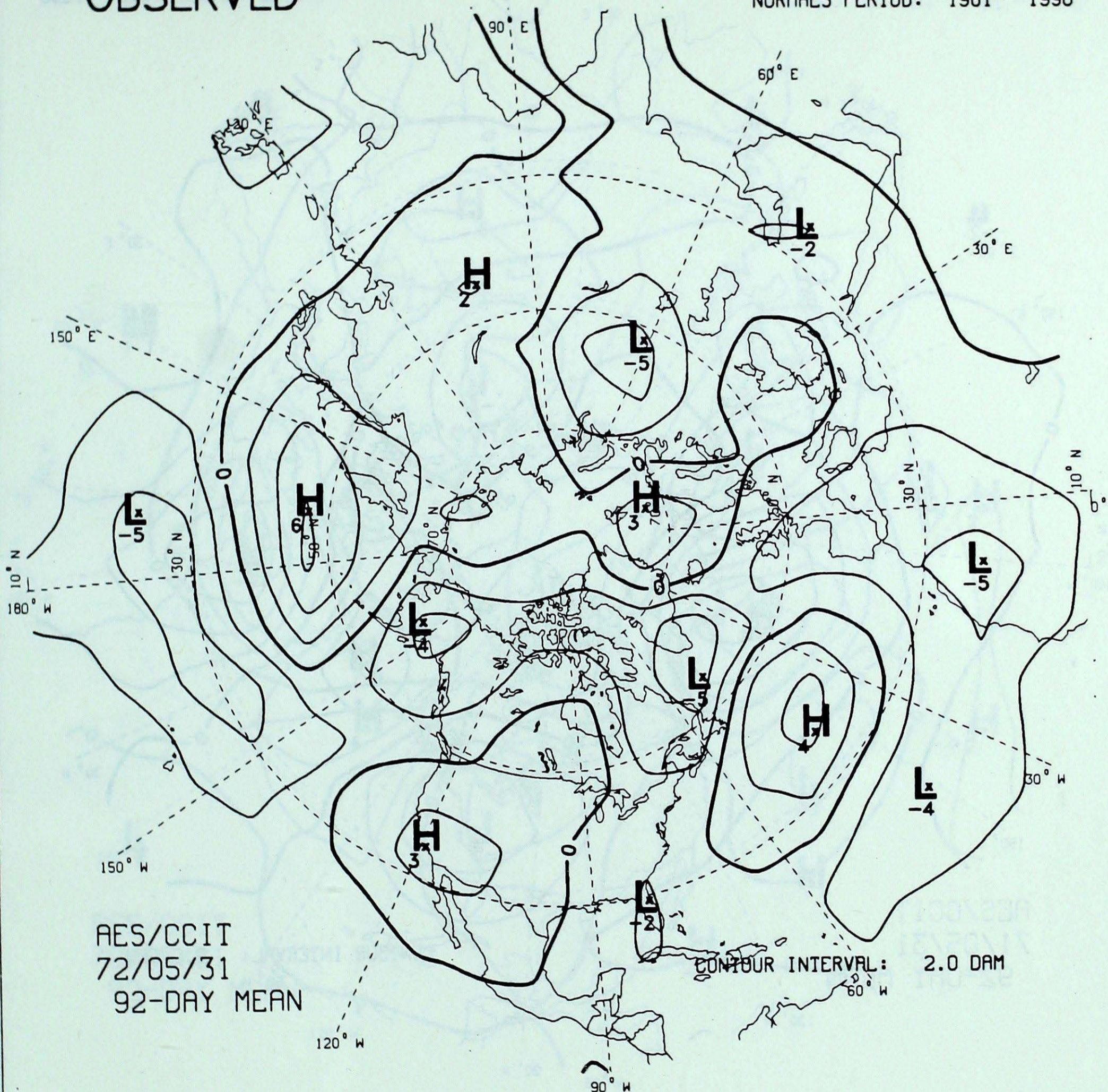
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 72 TO 31 MAY 72
92-DAY MEAN

OBSERVED

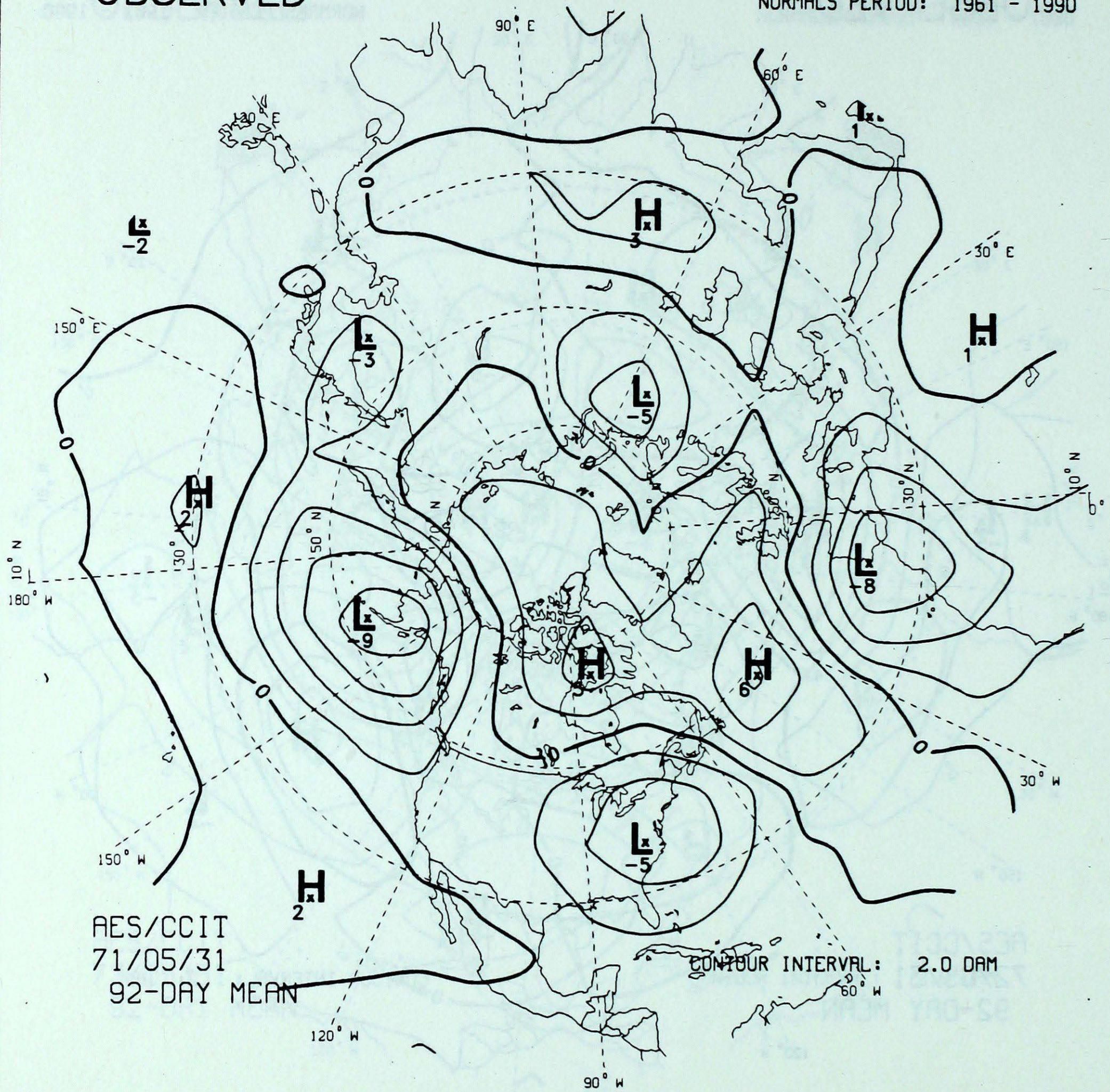
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 71 TO 31 MAY 71
92-DAY MEAN

OBSERVED

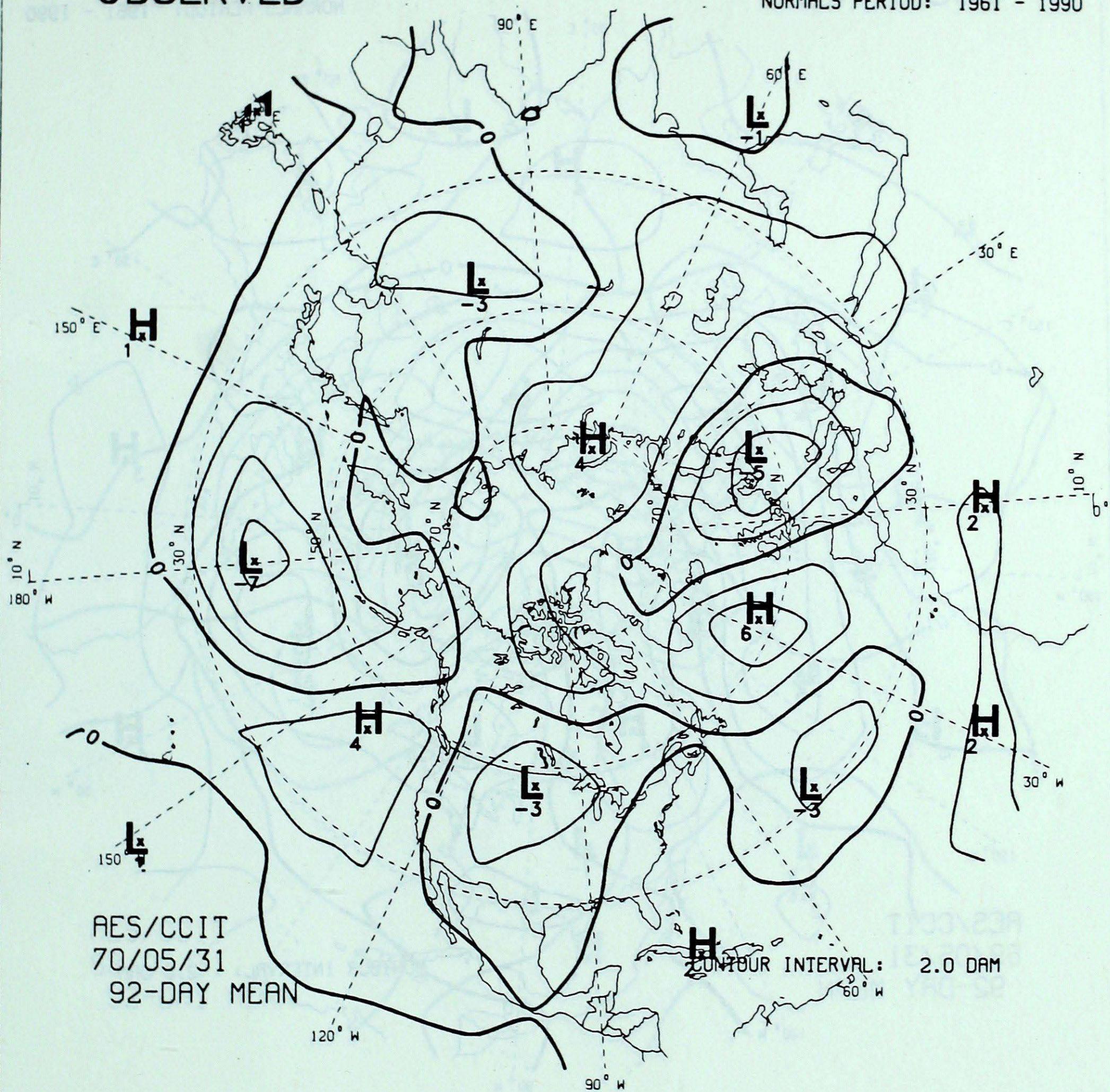
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 70 TO 31 MAY 70
92-DAY MEAN

OBSERVED

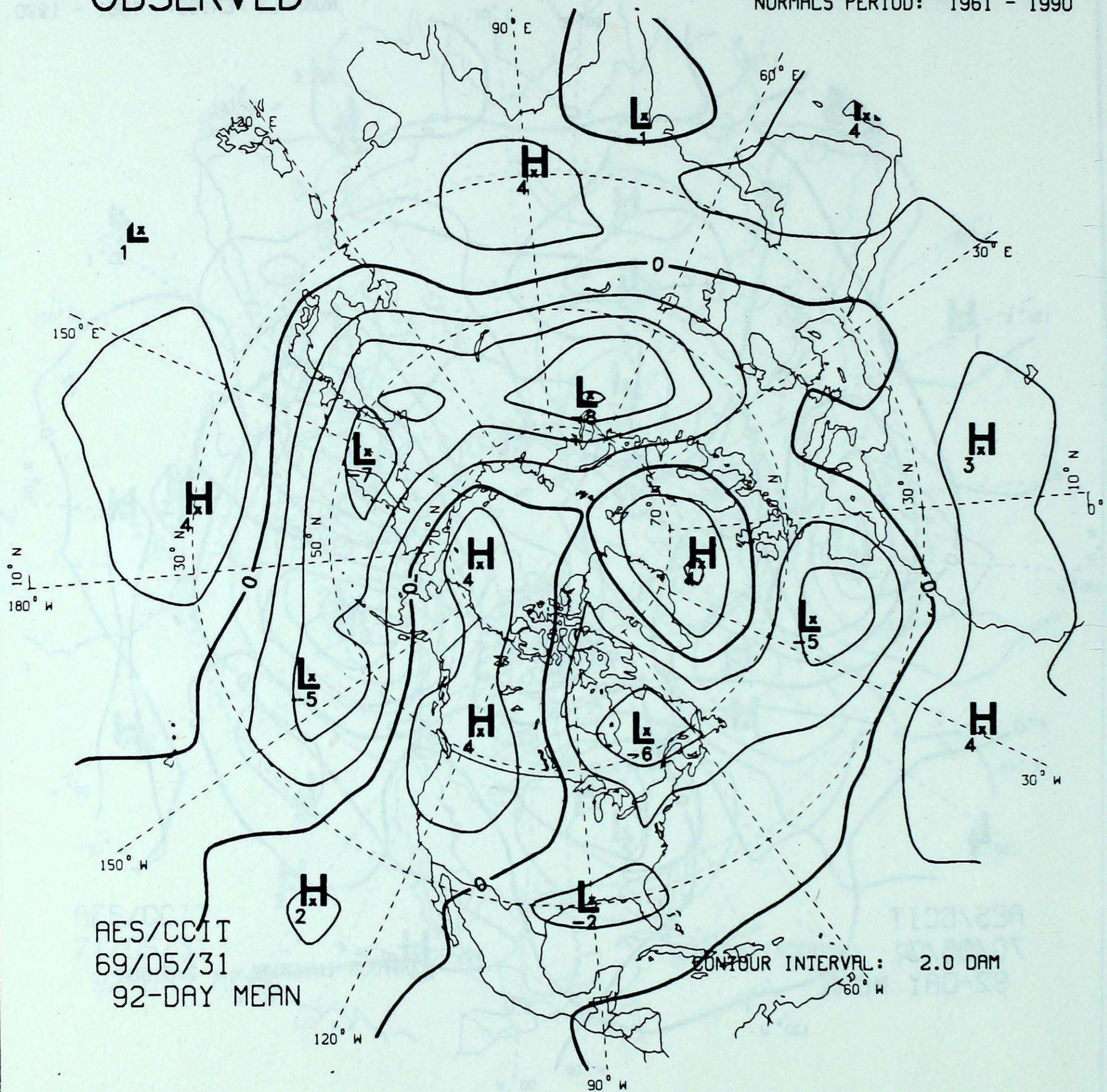
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 69 TO 31 MAY 69
92-DAY MEAN

OBSERVED

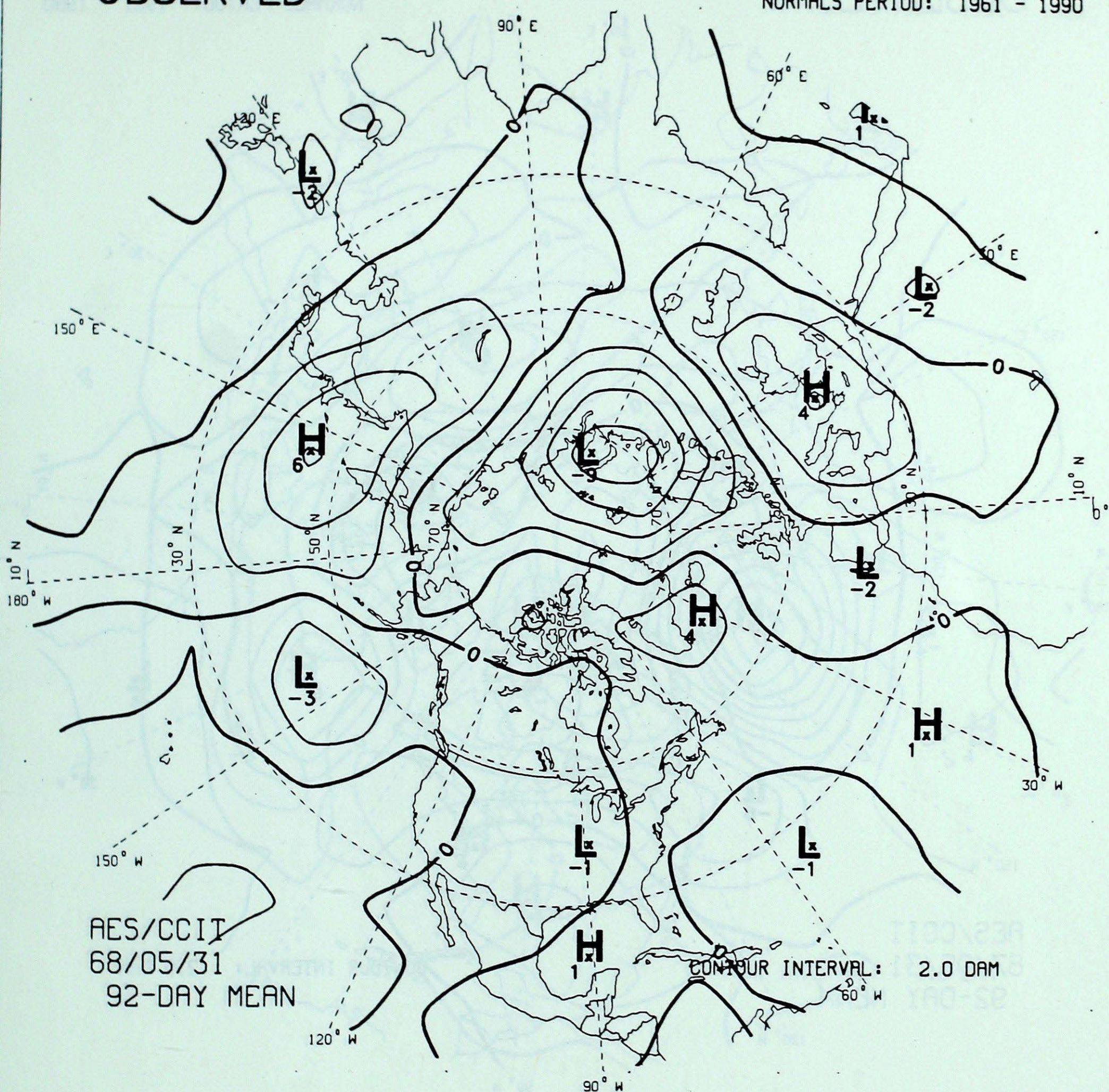
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 68 TO 31 MAY 68
92-DAY MEAN

OBSERVED

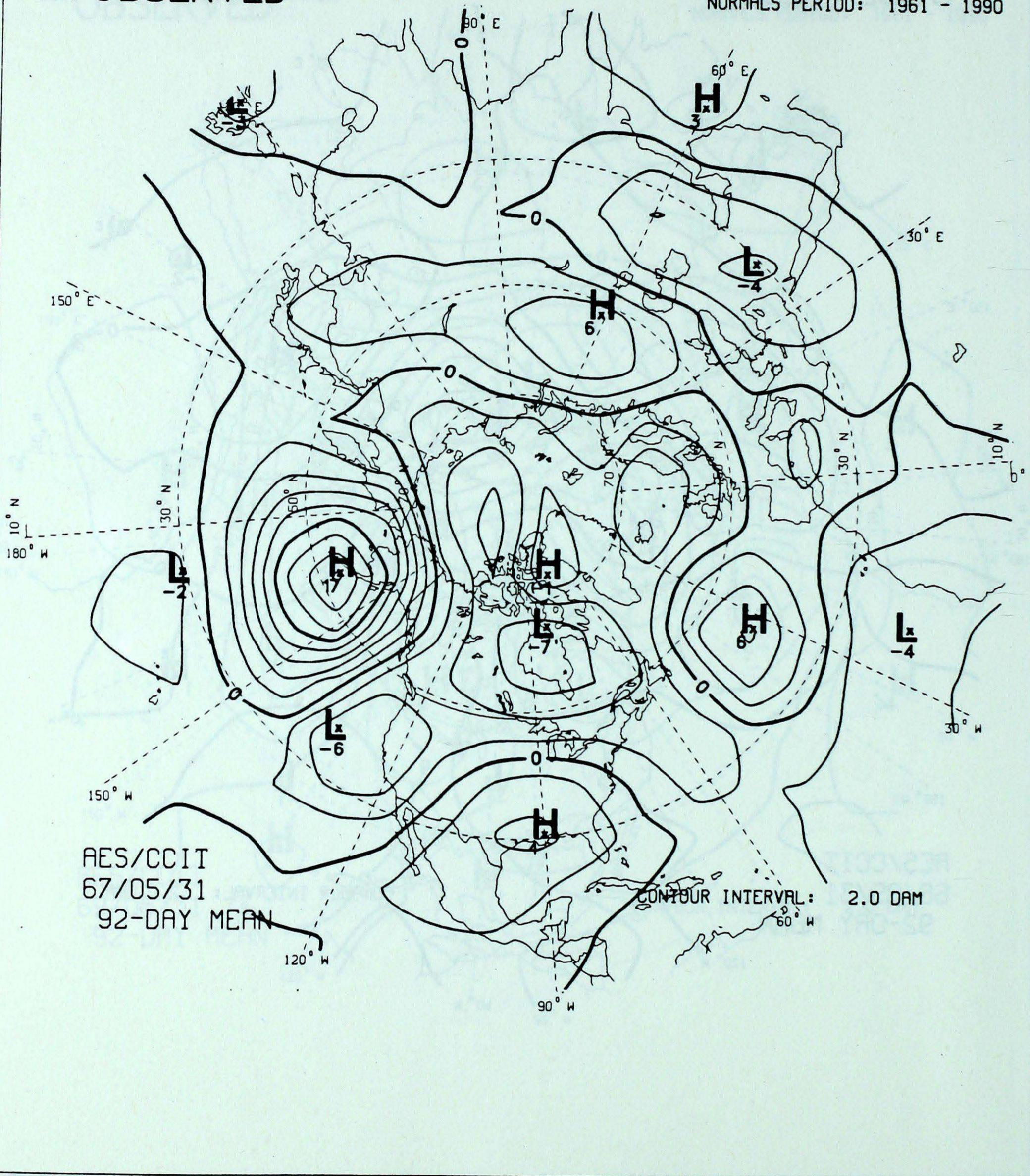
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 67 TO 31 MAY 67
92-DAY MEAN

OBSERVED

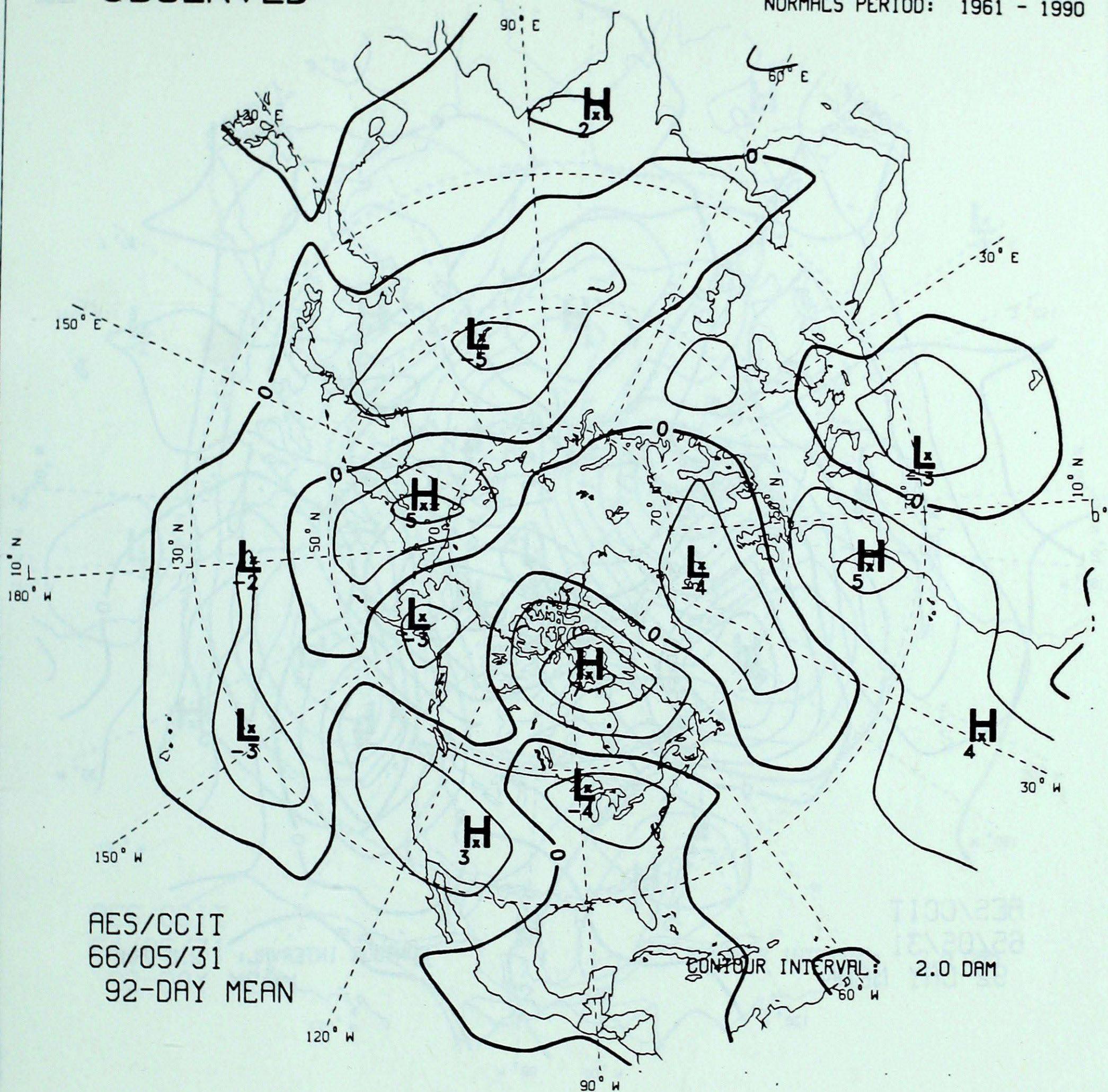
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 66 TO 31 MAY 66
92-DAY MEAN

OBSERVED

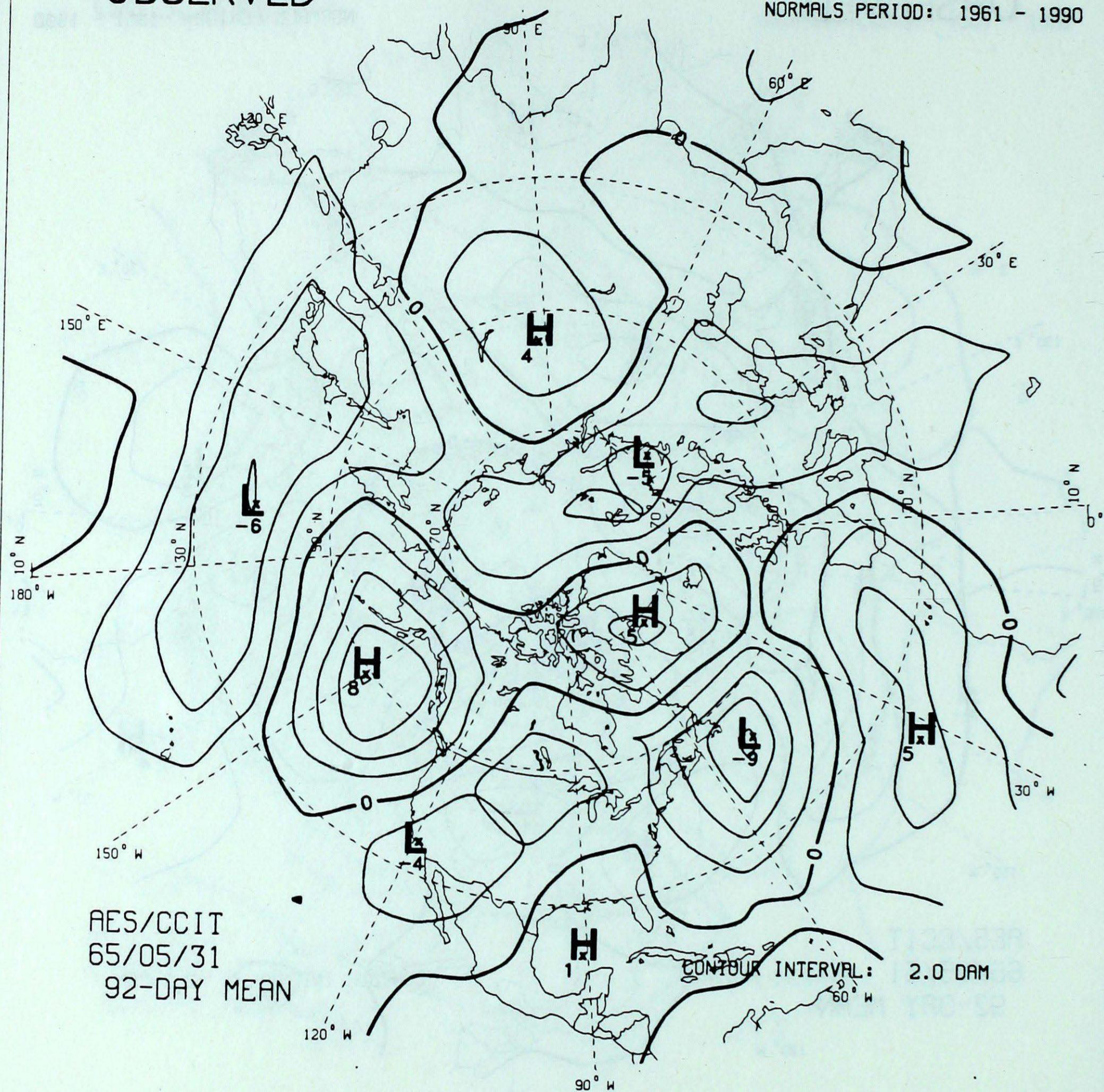
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 65 TO 31 MAY 65
92-DAY MEAN

OBSERVED

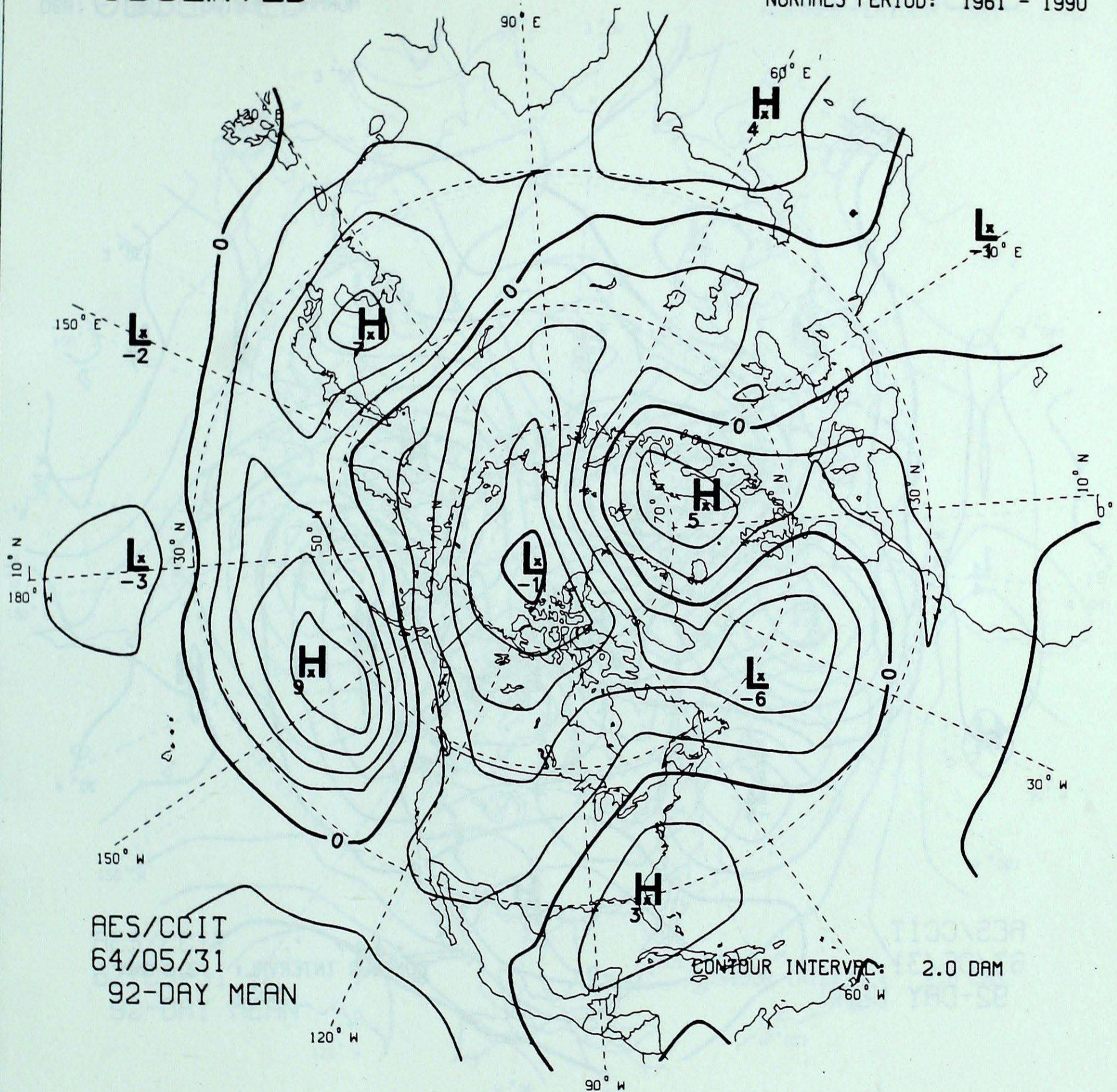
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 64 TO 31 MAY 64
92-DAY MEAN

OBSERVED

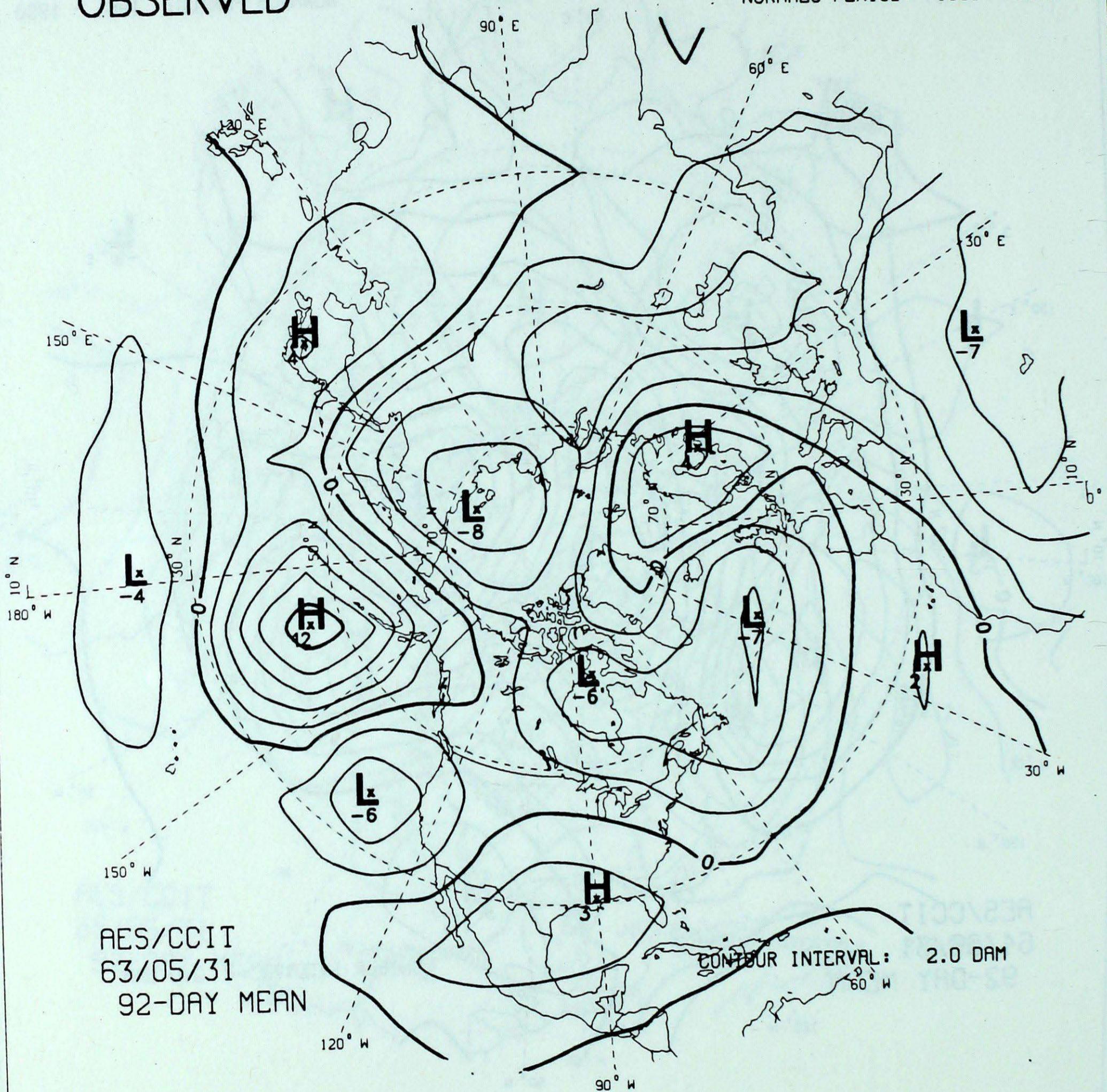
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 63 TO 31 MAY 63
92-DAY MEAN

OBSERVED

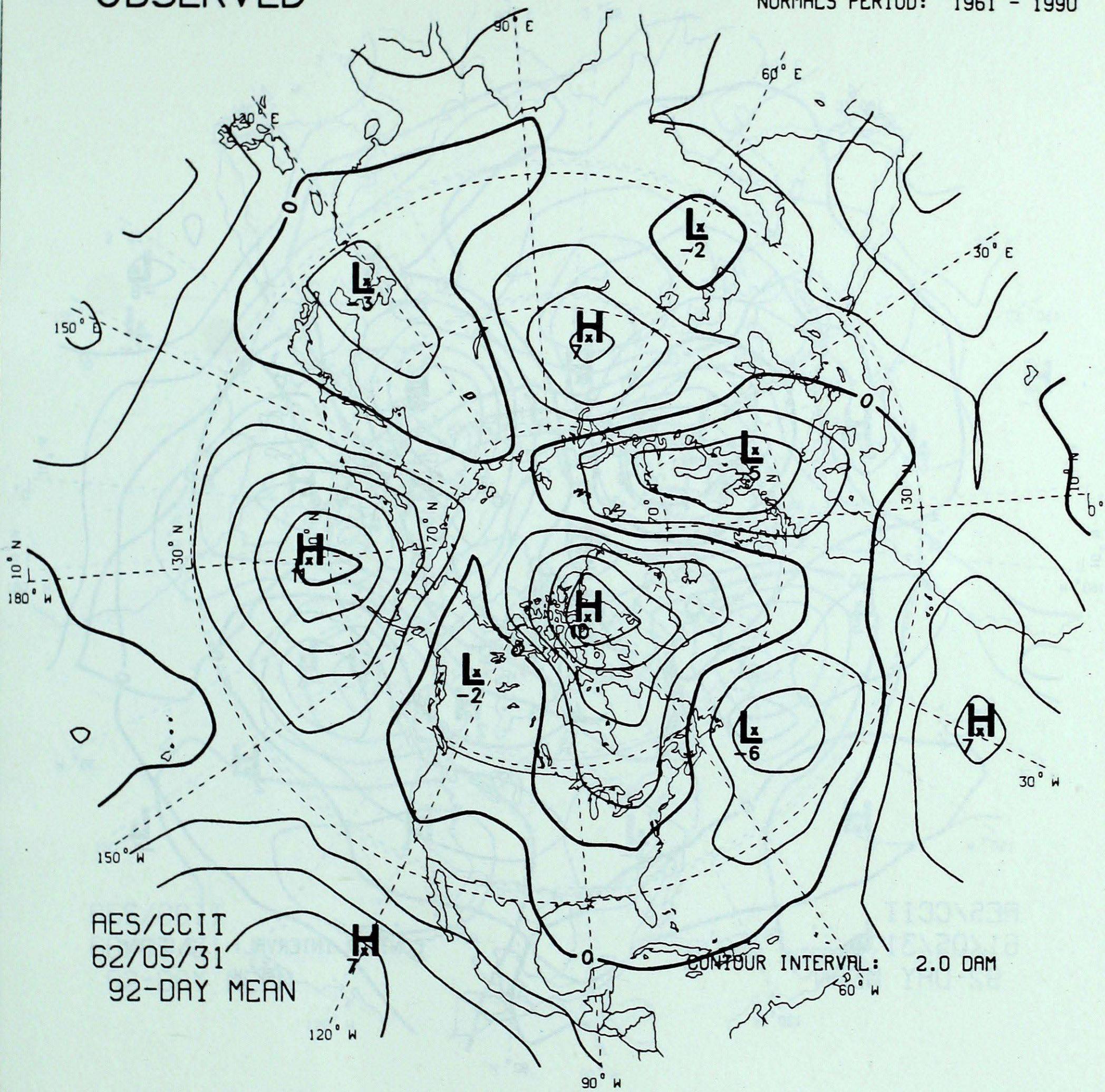
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 62 TO 31 MAY 62
92-DAY MEAN

OBSERVED

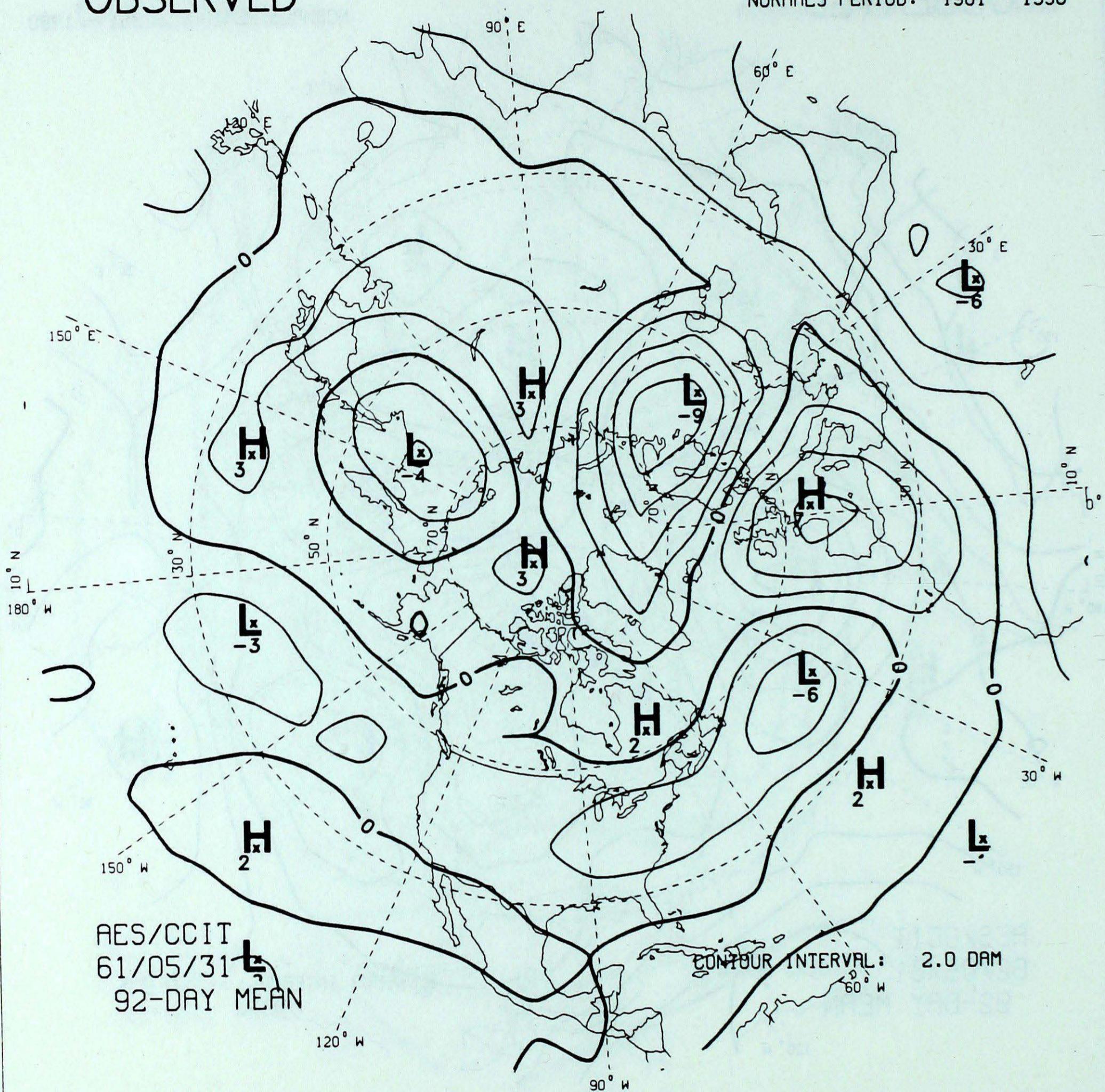
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 61 TO 31 MAY 61
92-DAY MEAN

OBSERVED

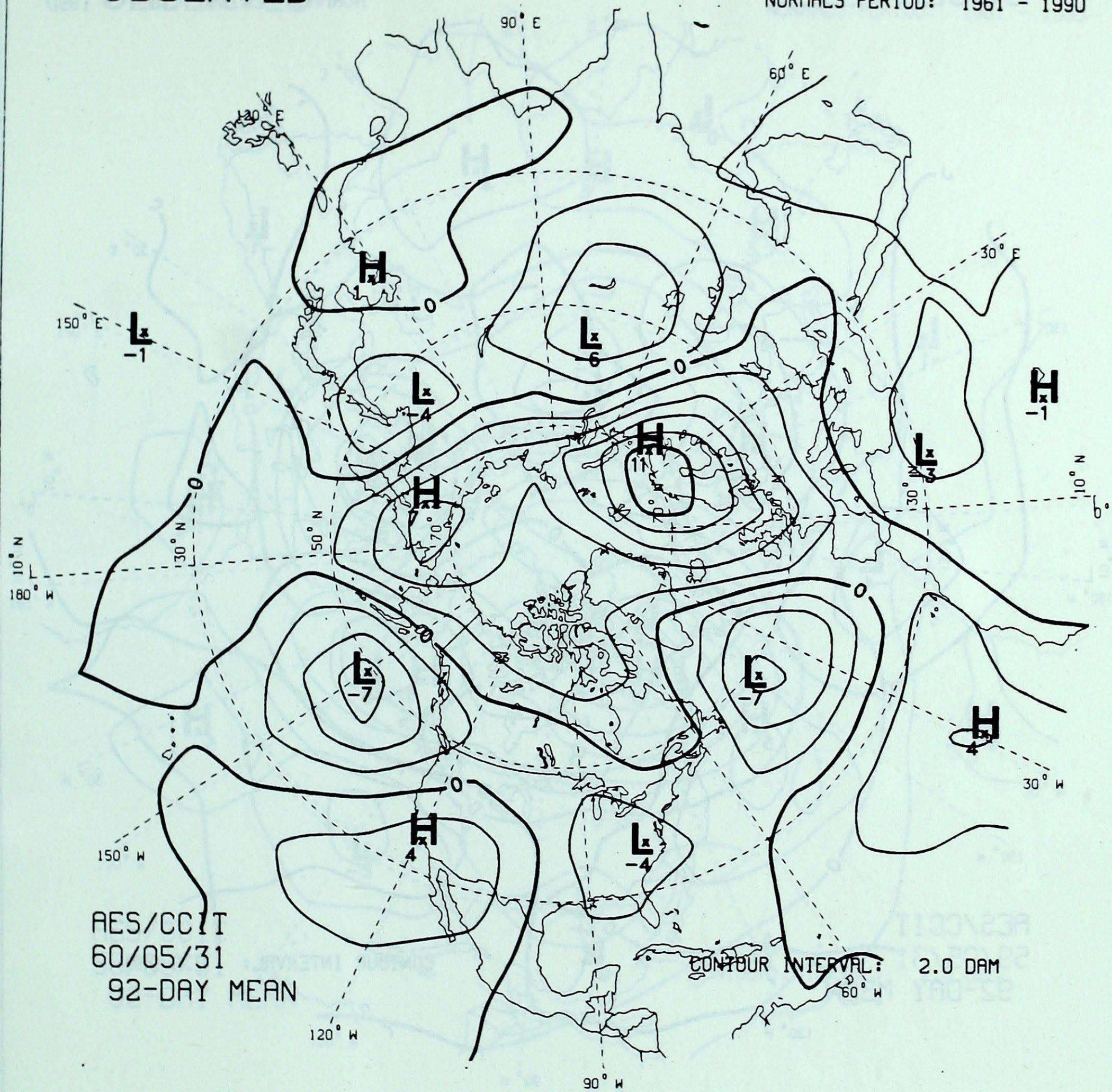
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 60 TO 31 MAY 60
92-DAY MEAN

OBSERVED

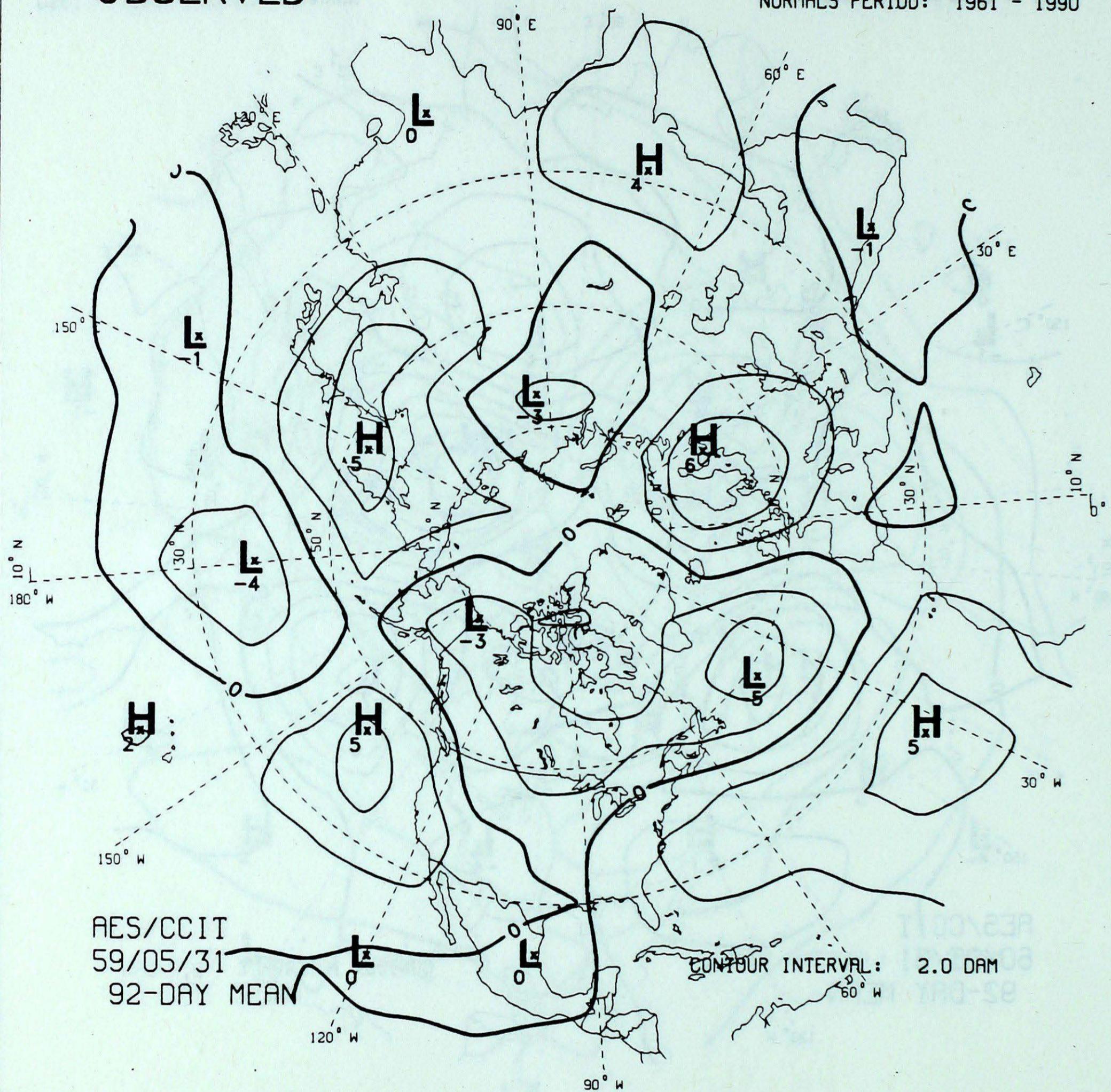
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 59 TO 31 MAY 59
92-DAY MEAN

OBSERVED

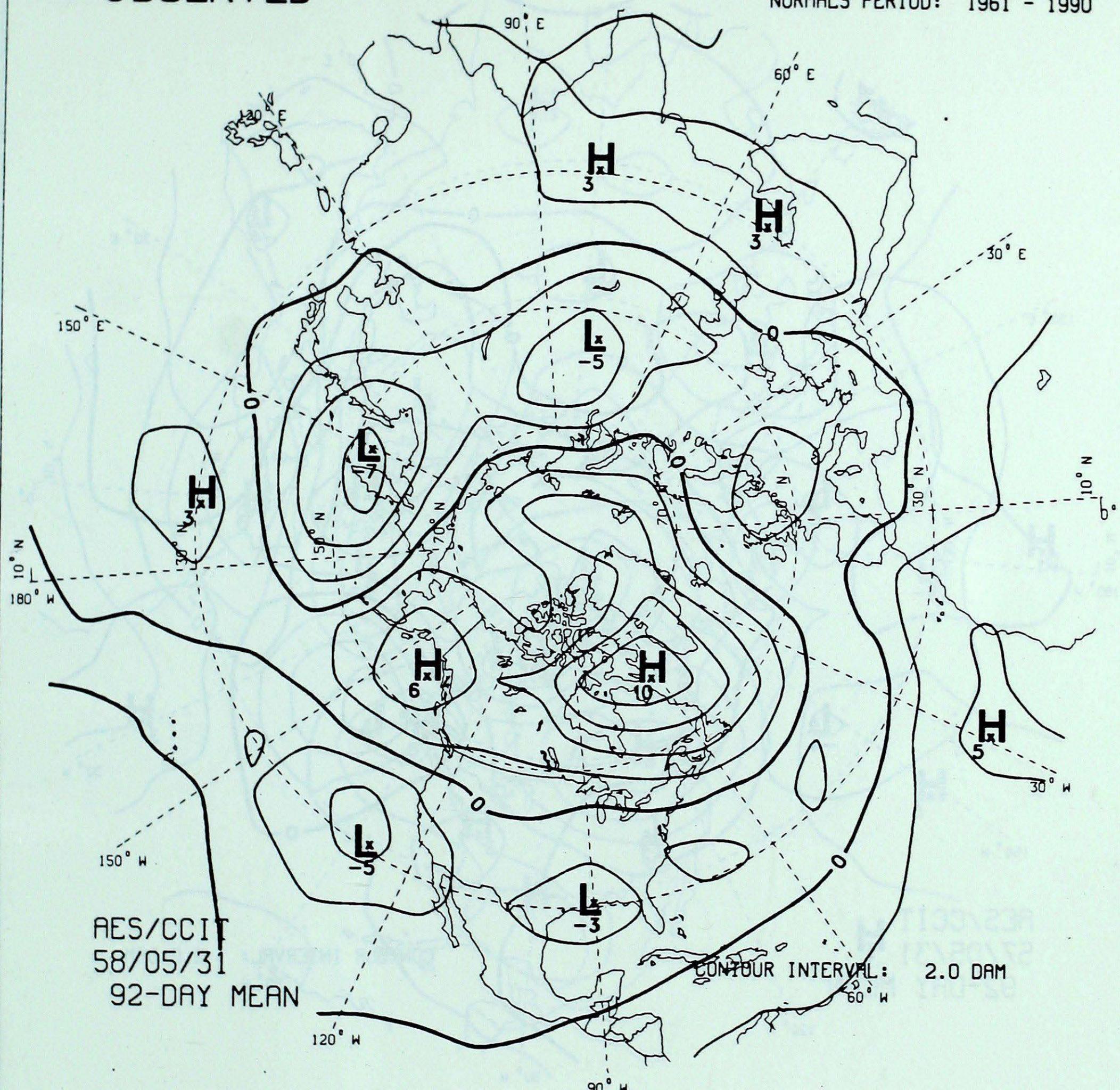
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 58 TO 31 MAY 58
92-DAY MEAN

OBSERVED

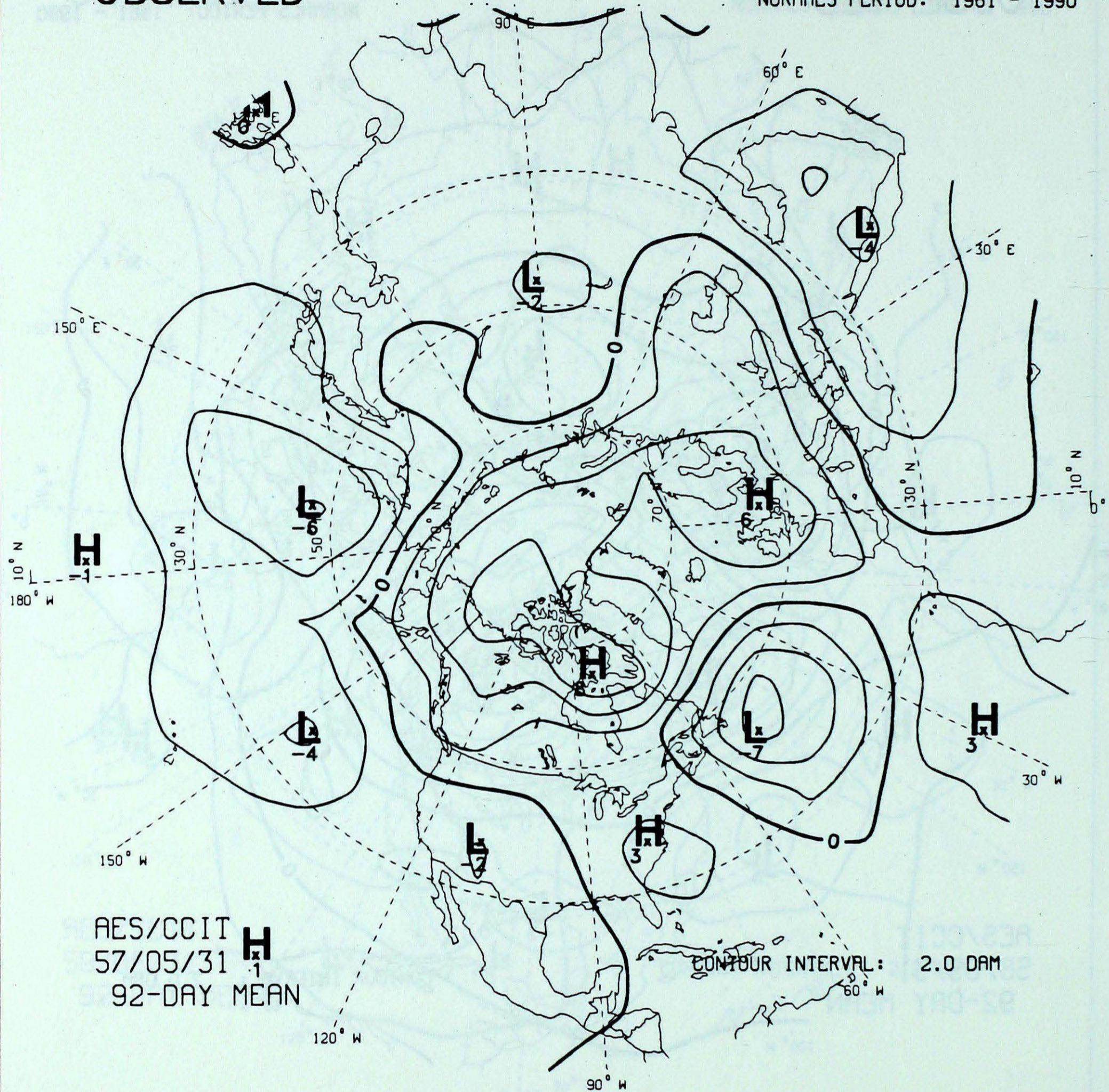
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 57 TO 31 MAY 57
92-DAY MEAN

OBSERVED

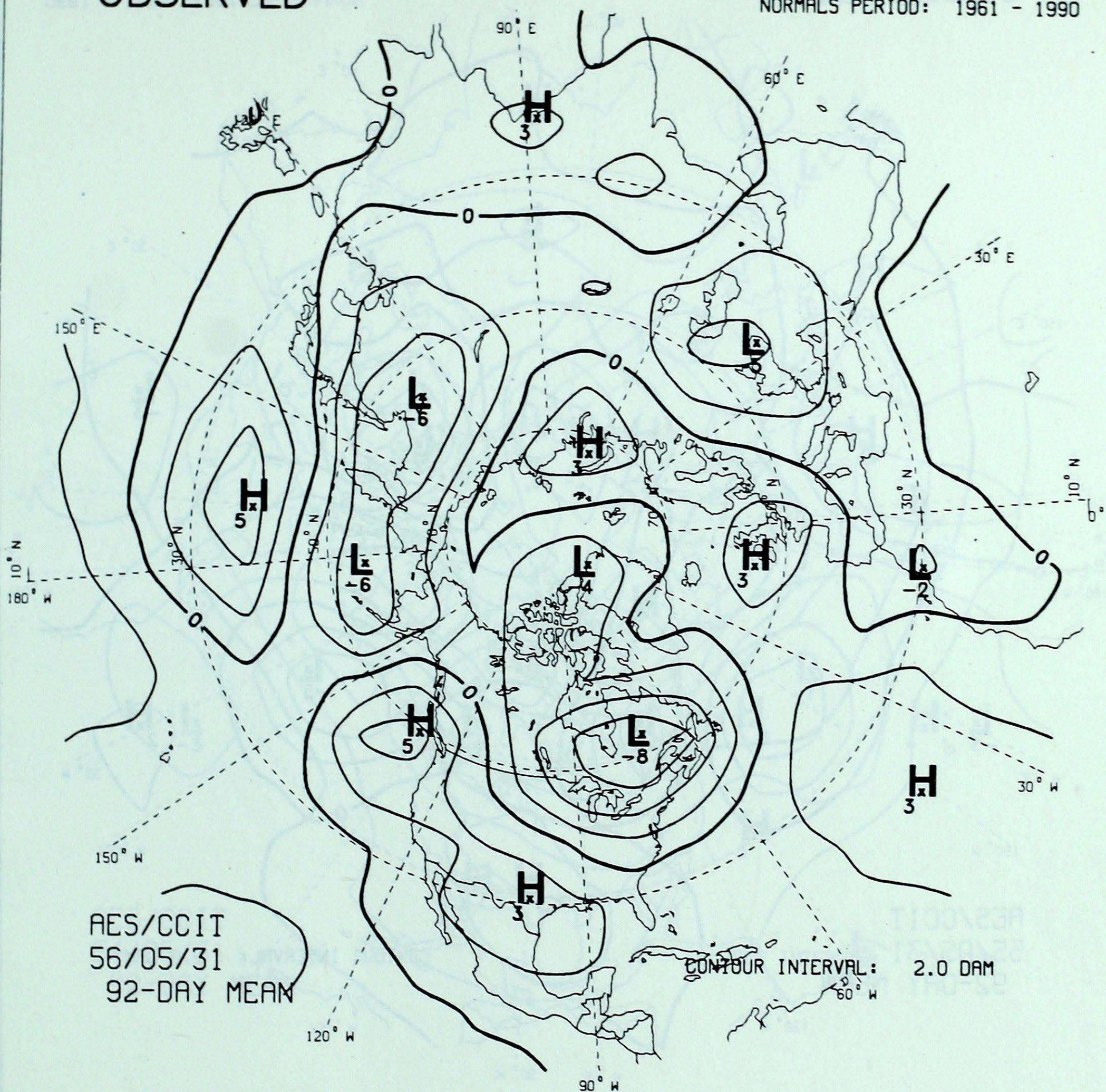
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 56 TO 31 MAY 56
92-DAY MEAN

OBSERVED

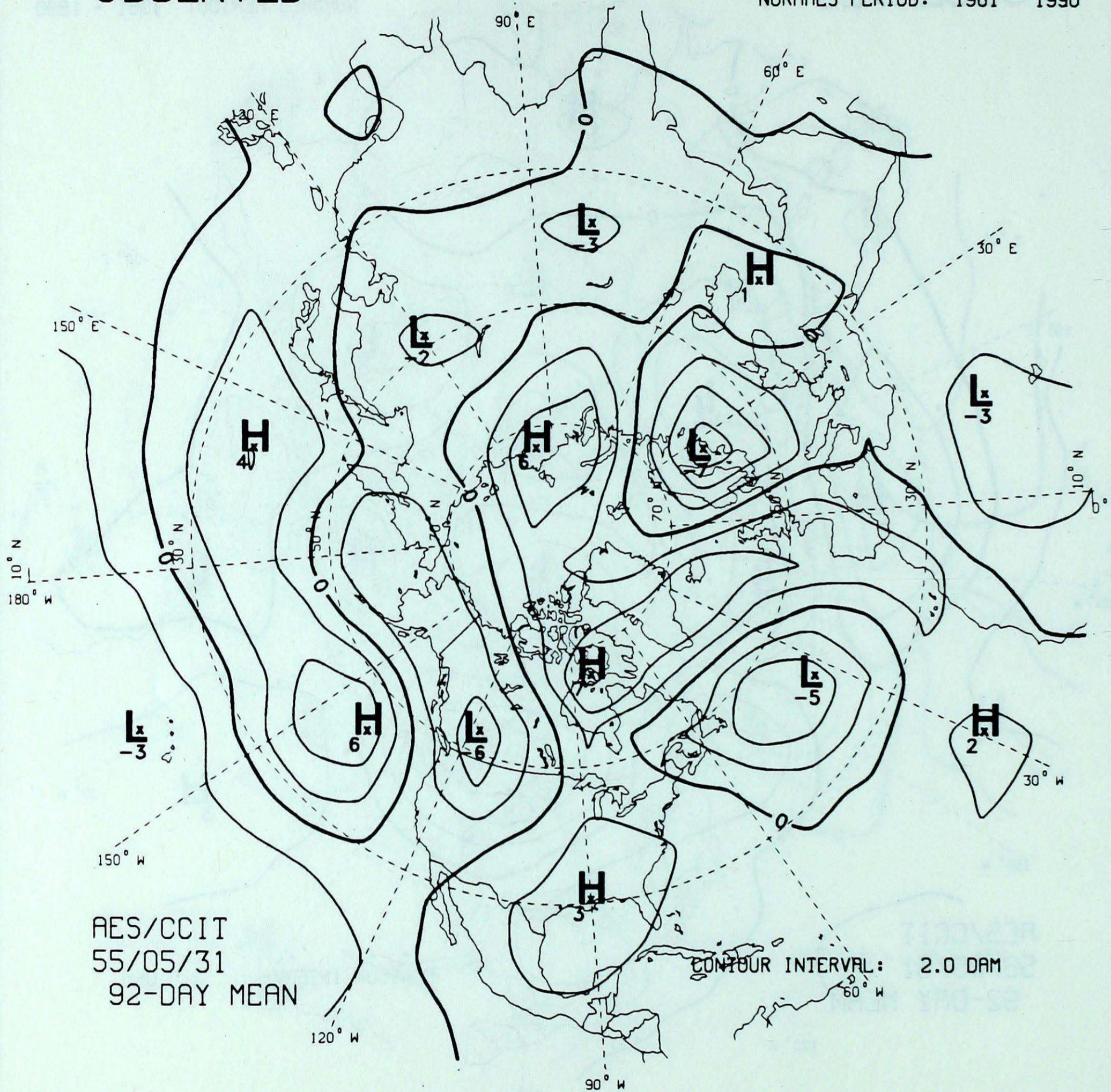
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 55 TO 31 MAY 55
92-DAY MEAN

OBSERVED

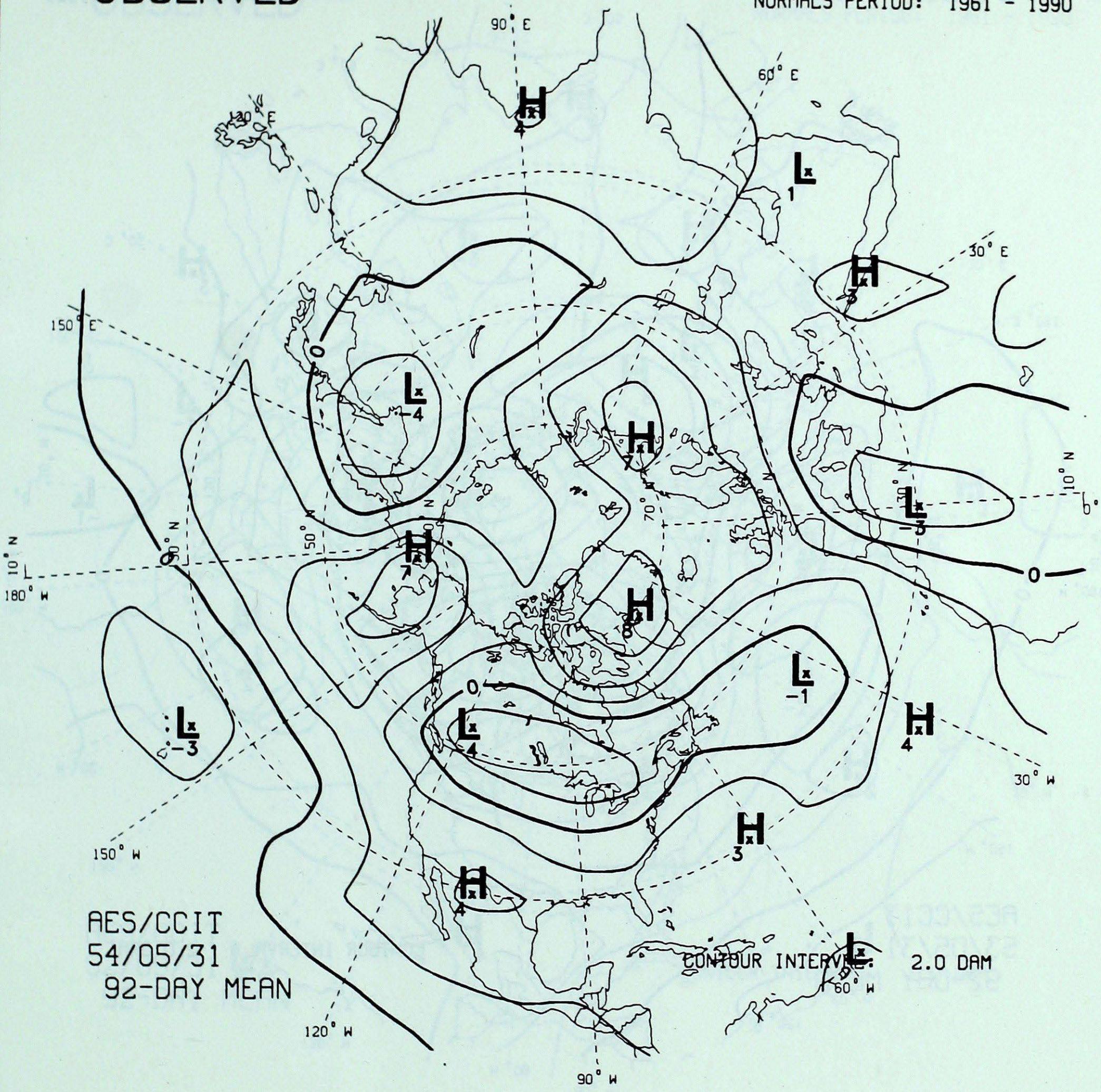
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 54 TO 31 MAY 54
92-DAY MEAN

OBSERVED

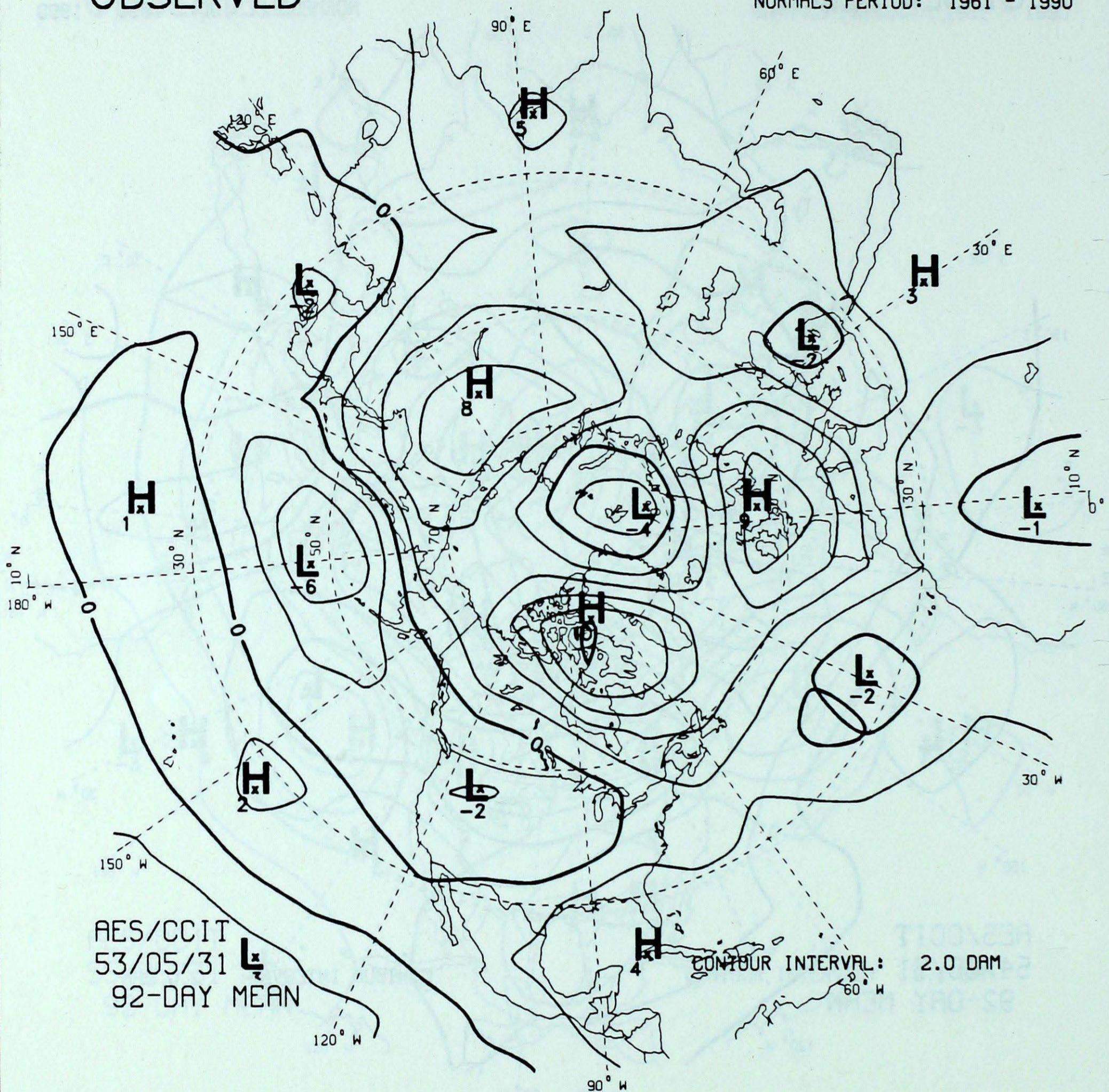
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 53 TO 31 MAY 53
92-DAY MEAN

OBSERVED

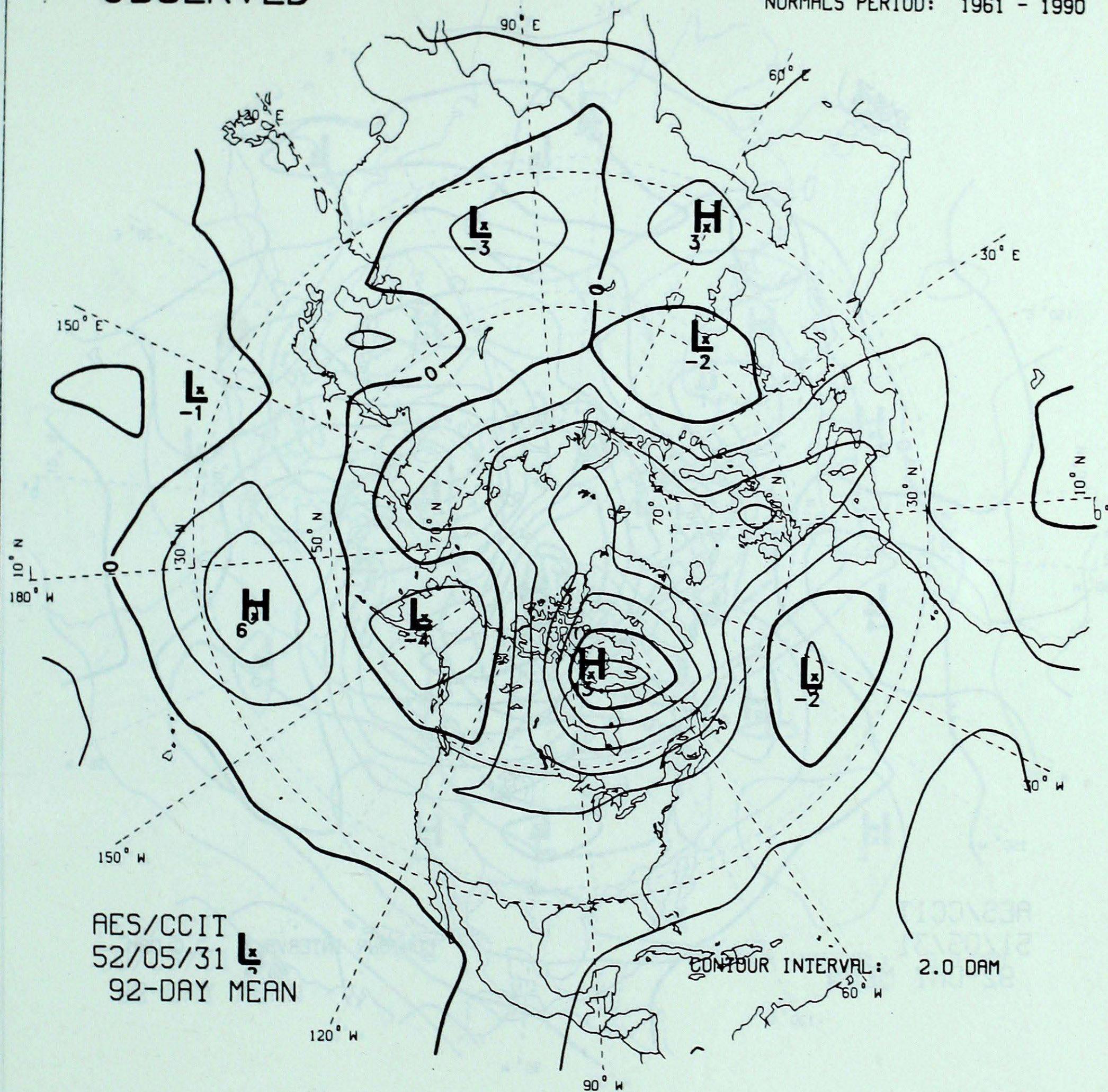
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 52 TO 31 MAY 52
92-DAY MEAN

OBSERVED

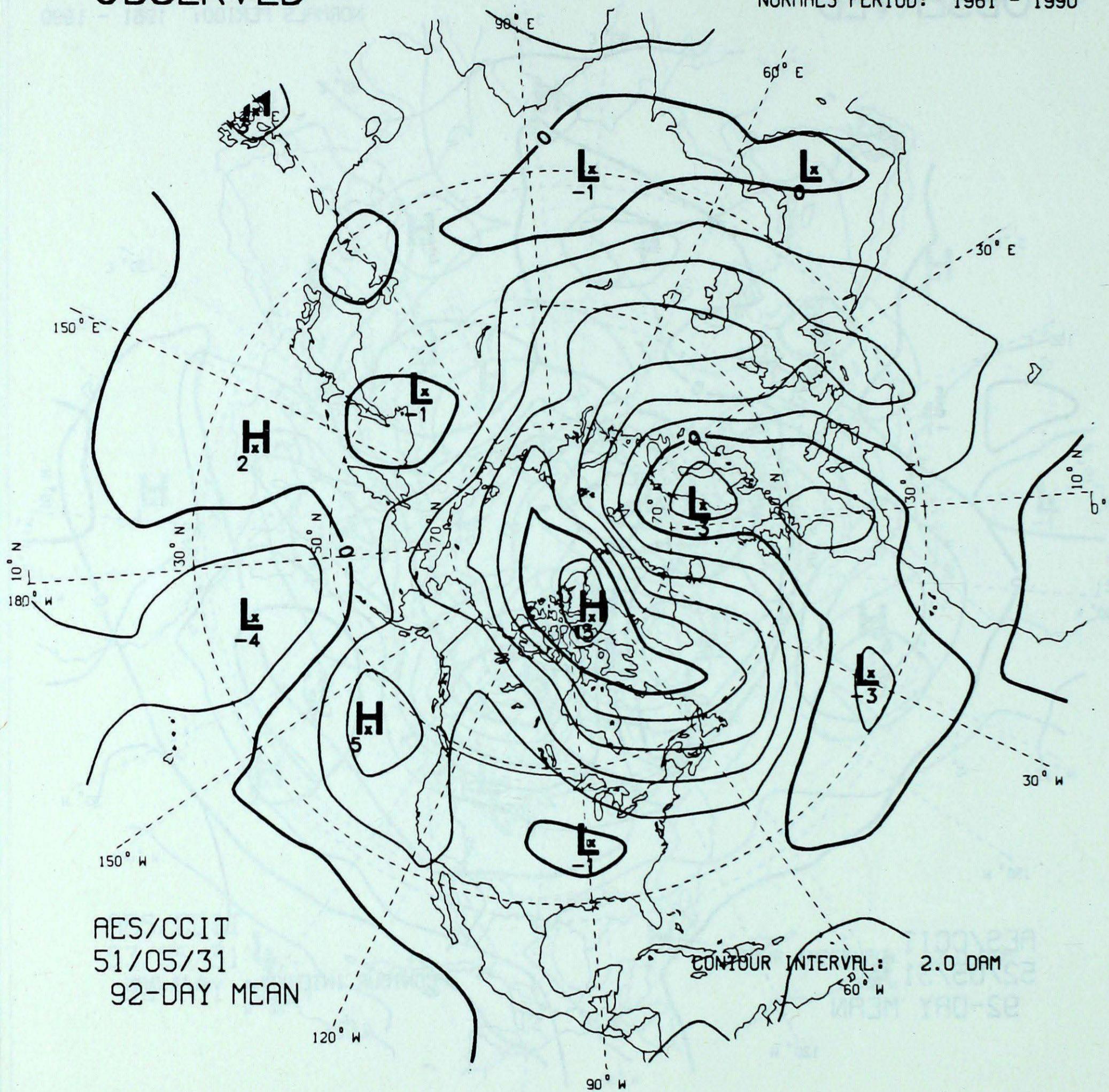
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 51 TO 31 MAY 51
92-DAY MEAN

OBSERVED

NORMALS PERIOD: 1961 - 1990

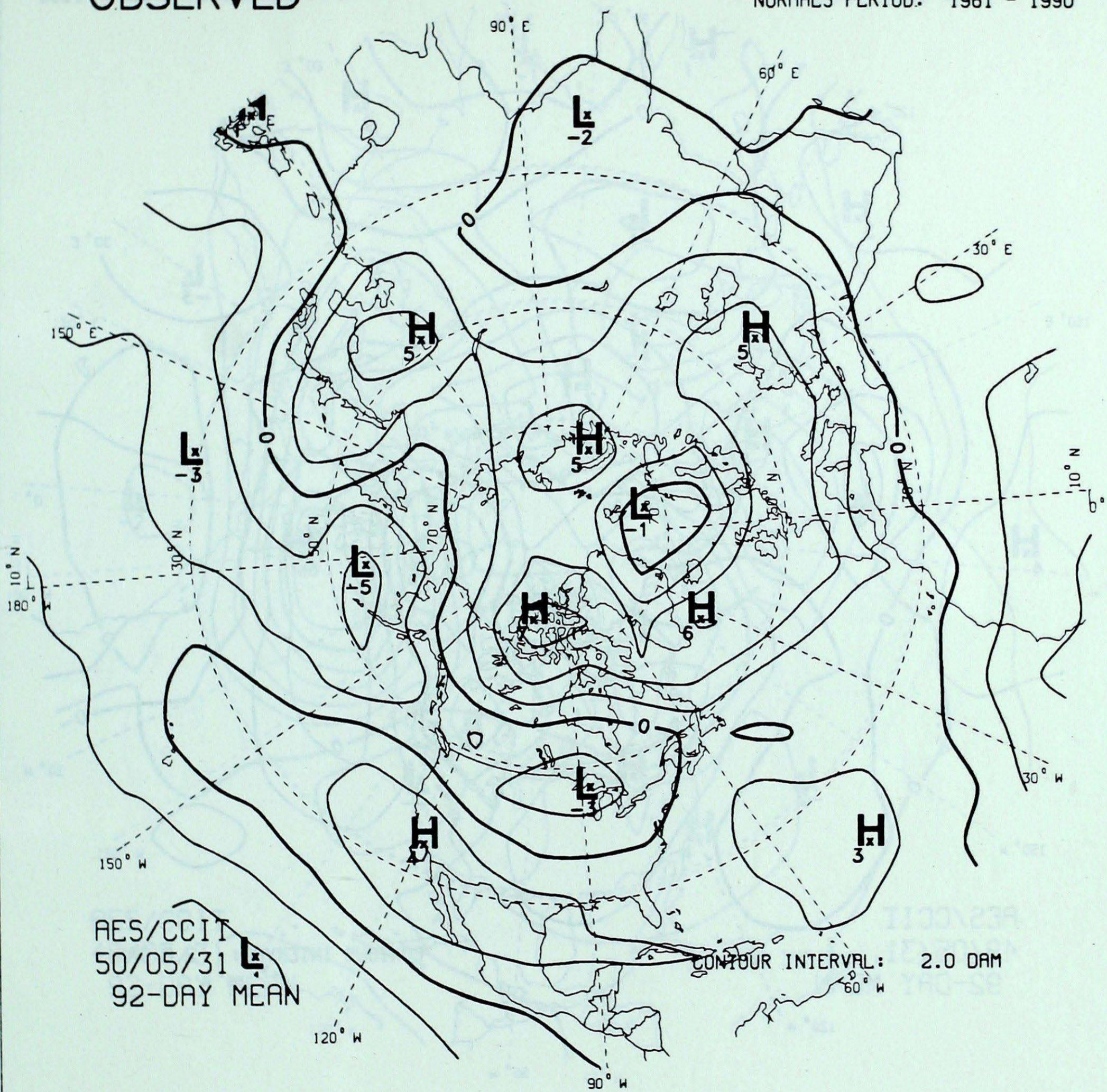


AES/CCIT
51/05/31
92-DAY MEAN

50 KPA HEIGHT ANOMALY
01 MAR 50 TO 31 MAY 50
92-DAY MEAN

OBSERVED

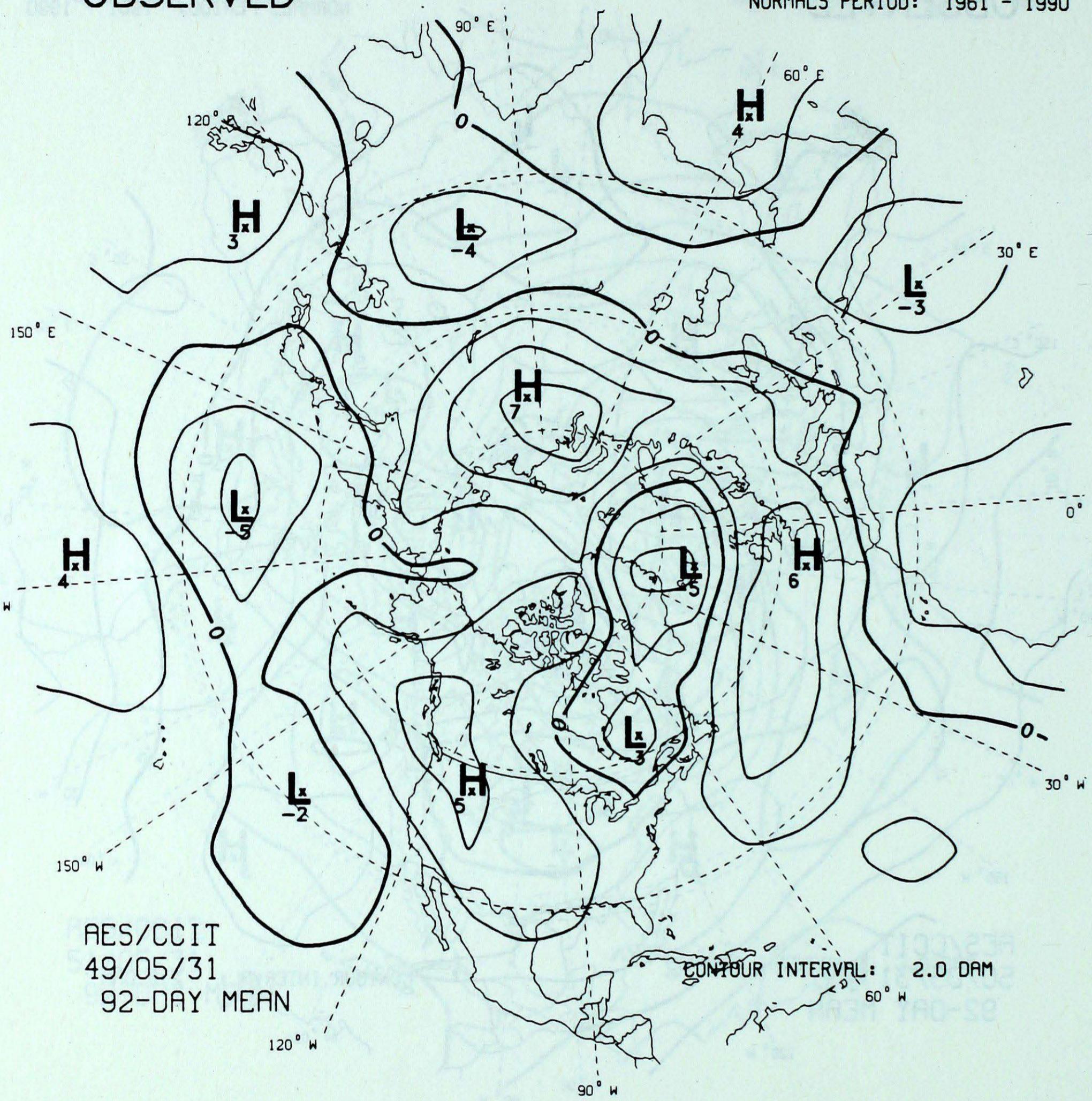
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 49 TO 31 MAY 49
92-DAY MEAN

OBSERVED

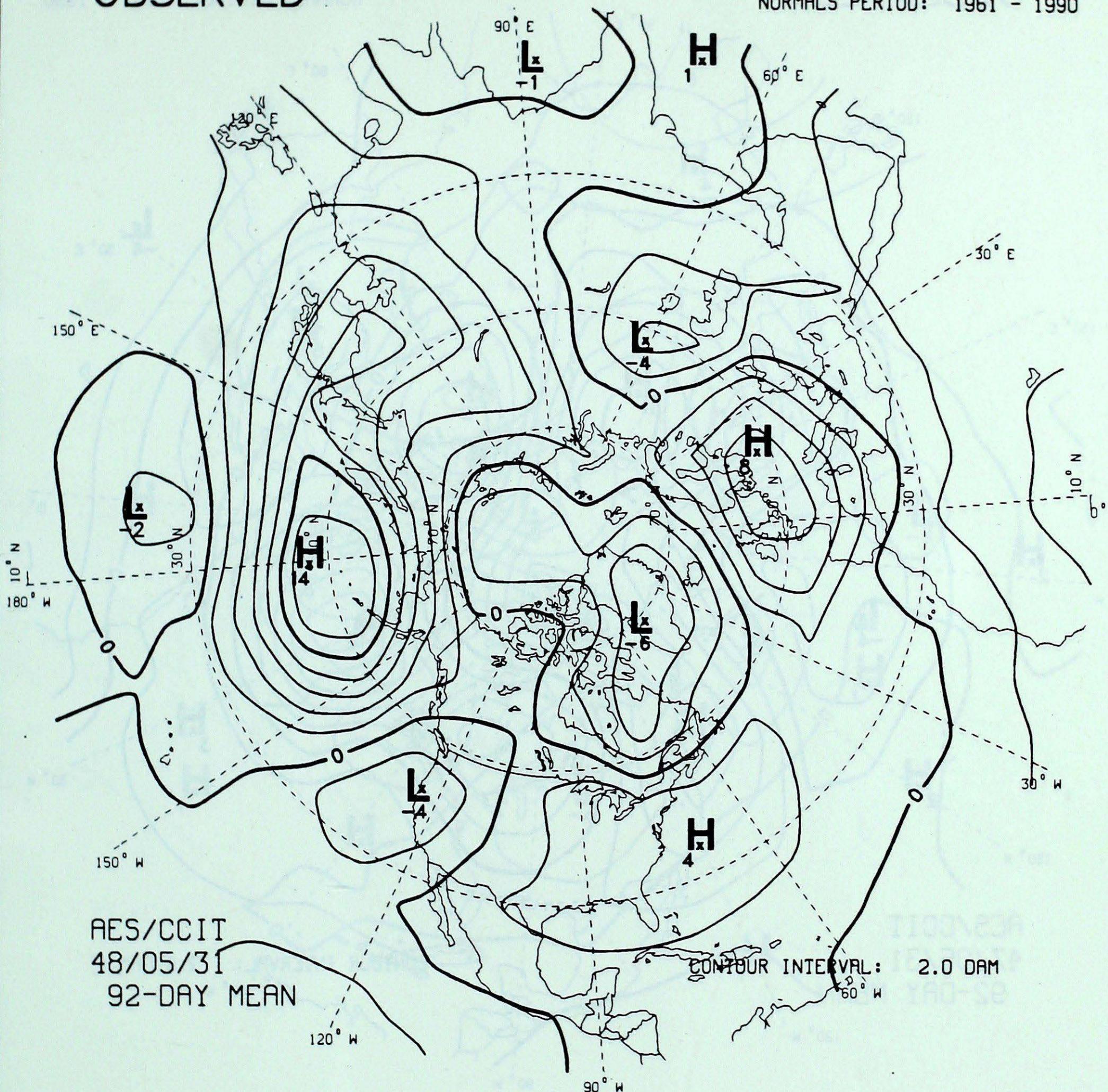
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 48 TO 31 MAY 48
92-DAY MEAN

OBSERVED

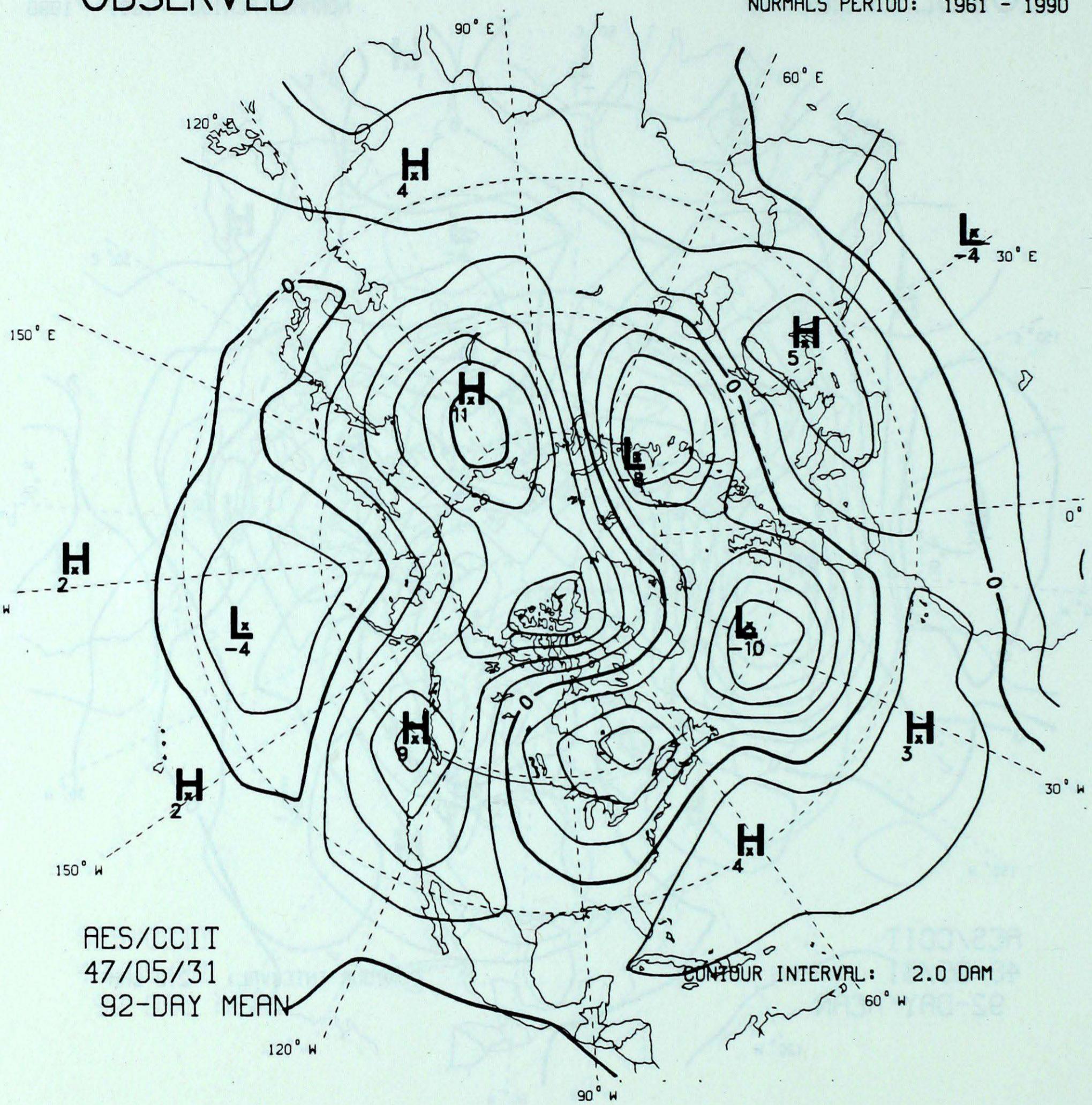
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 MAR 47 TO 31 MAY 47
92-DAY MEAN

OBSERVED

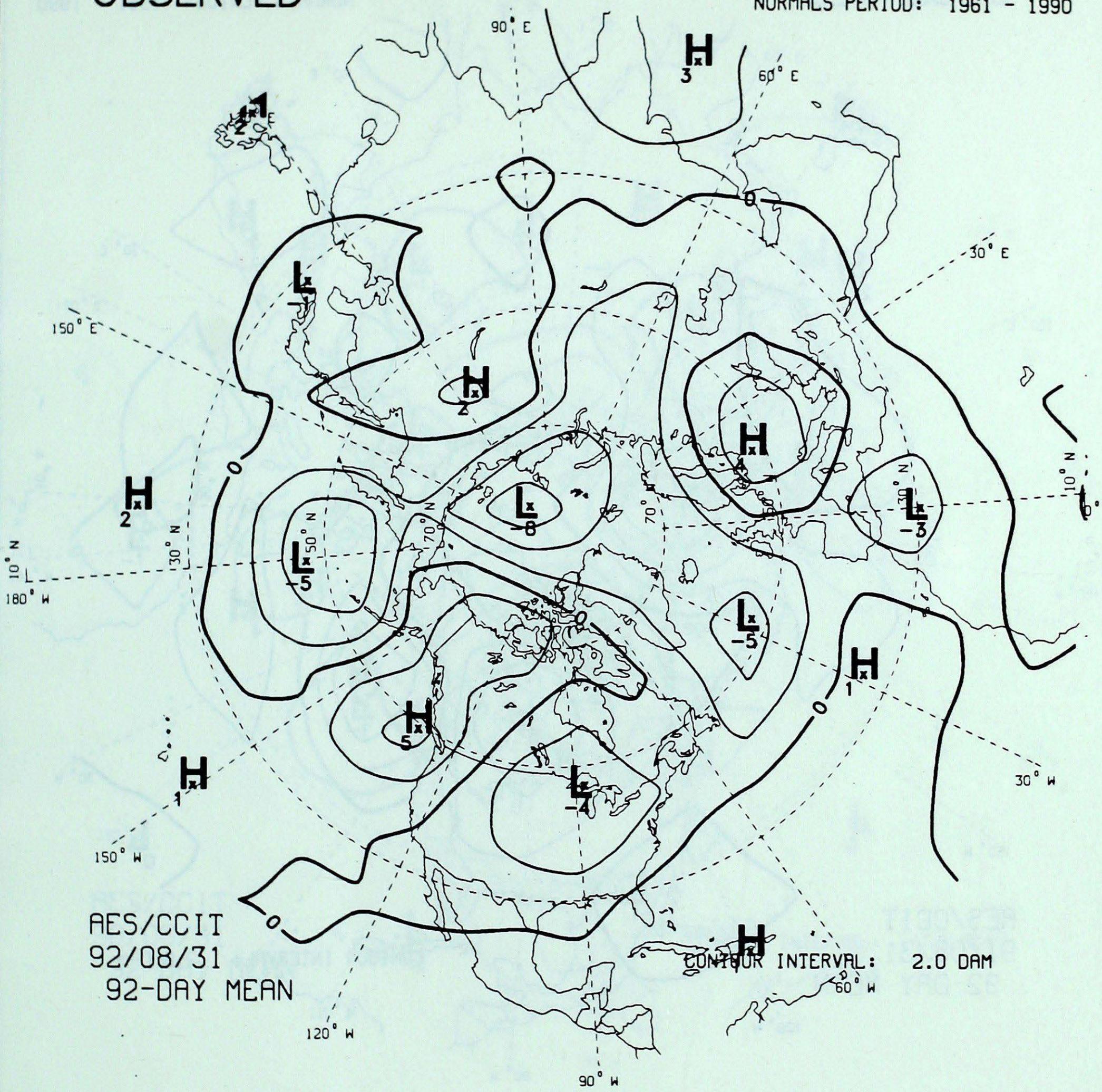
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 92 TO 31 AUG 92
92-DAY MEAN

OBSERVED

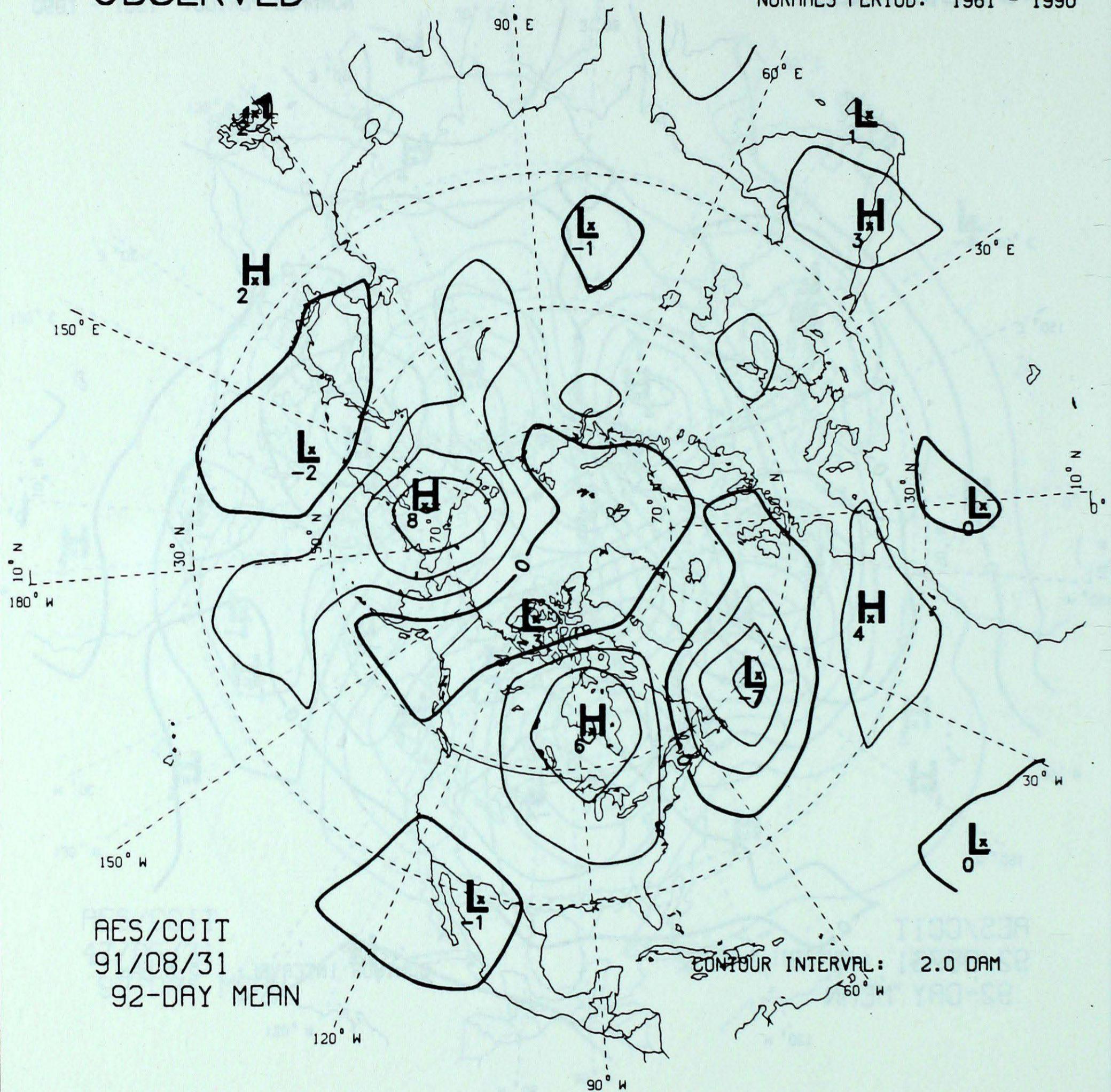
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 91 TO 31 AUG 91
92-DAY MEAN

OBSERVED

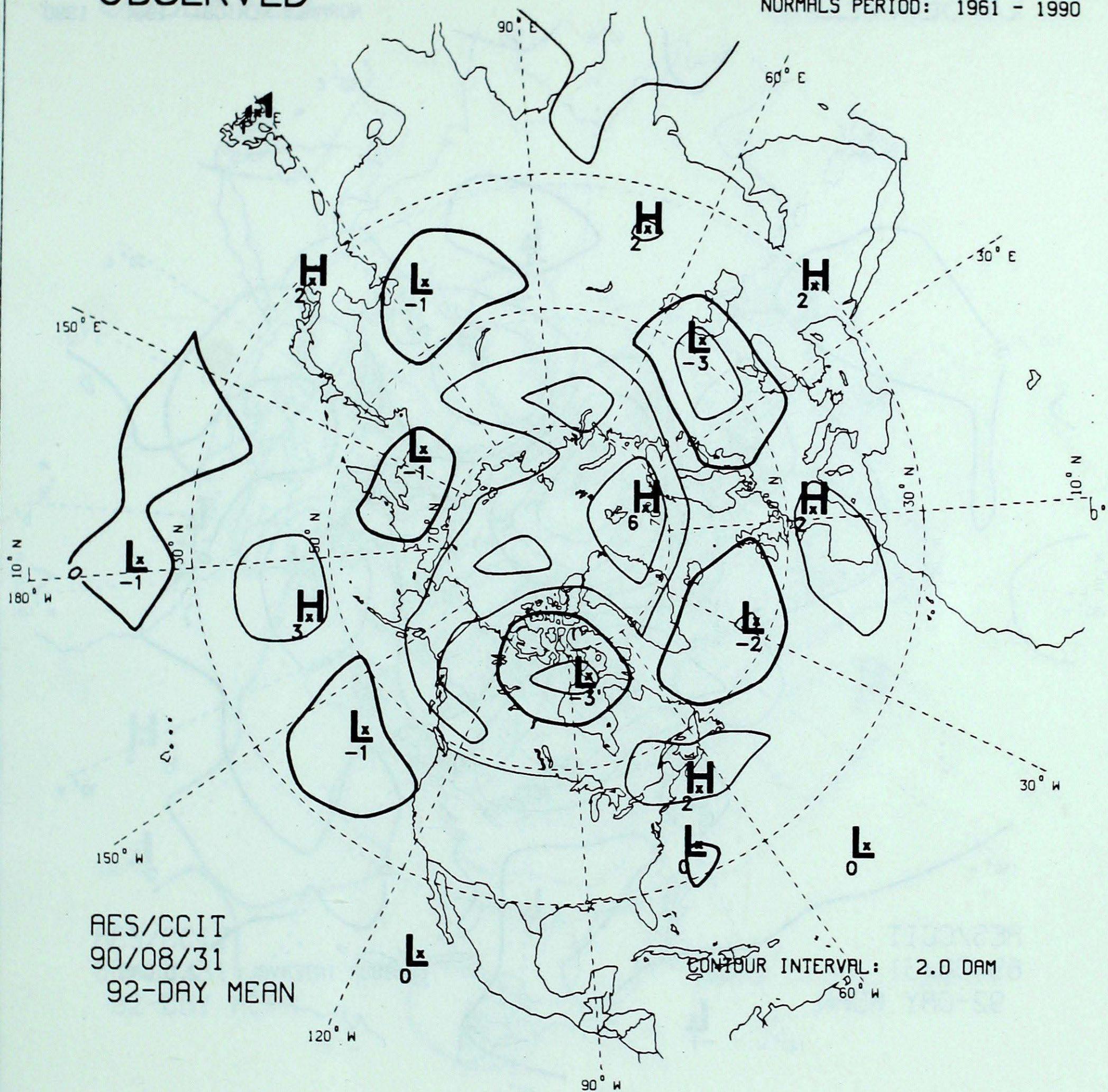
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 90 TO 31 AUG 90
92-DAY MEAN

OBSERVED

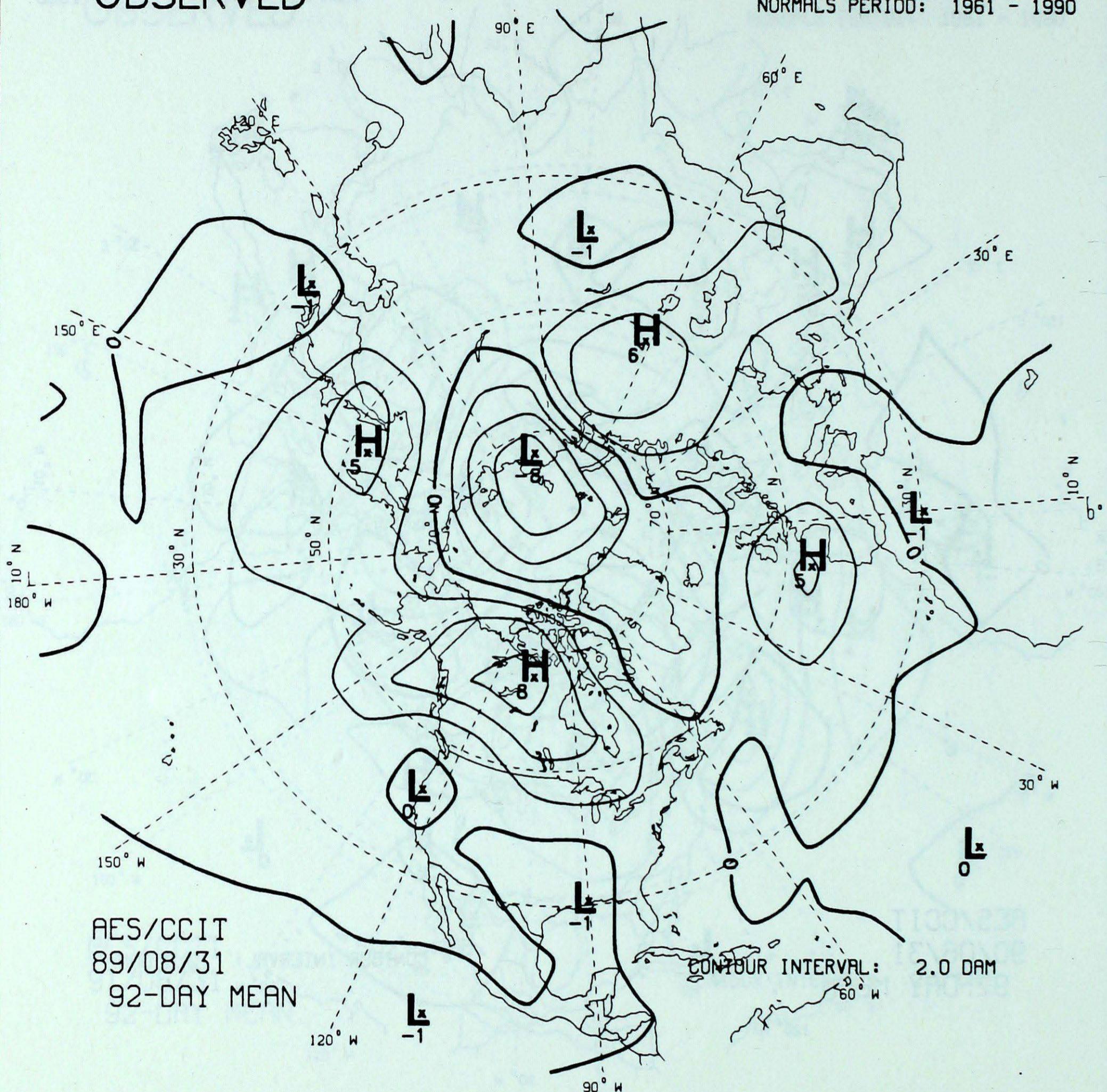
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 89 TO 31 AUG 89
92-DAY MEAN

OBSERVED

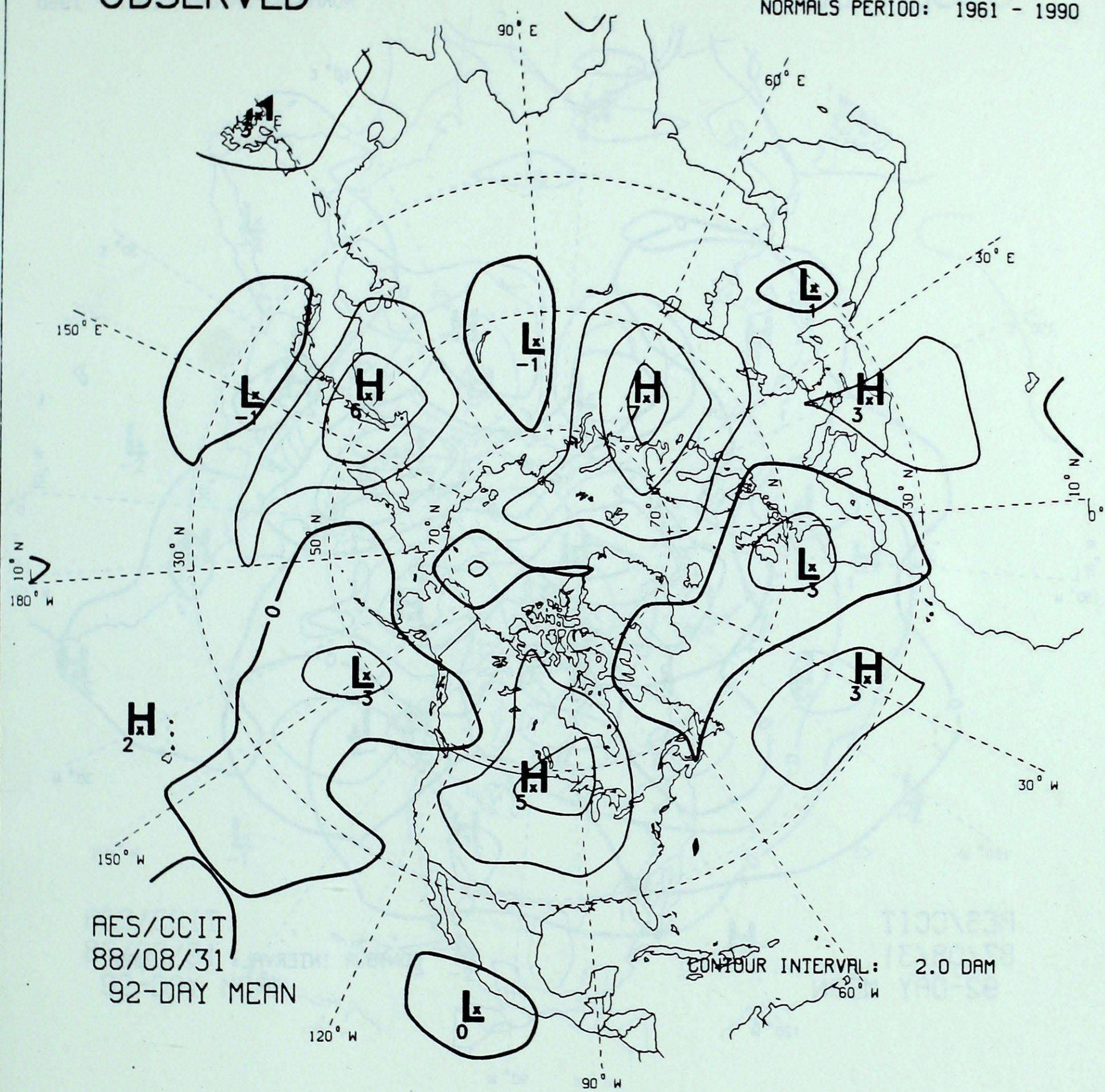
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 88 TO 31 AUG 88
92-DAY MEAN

OBSERVED

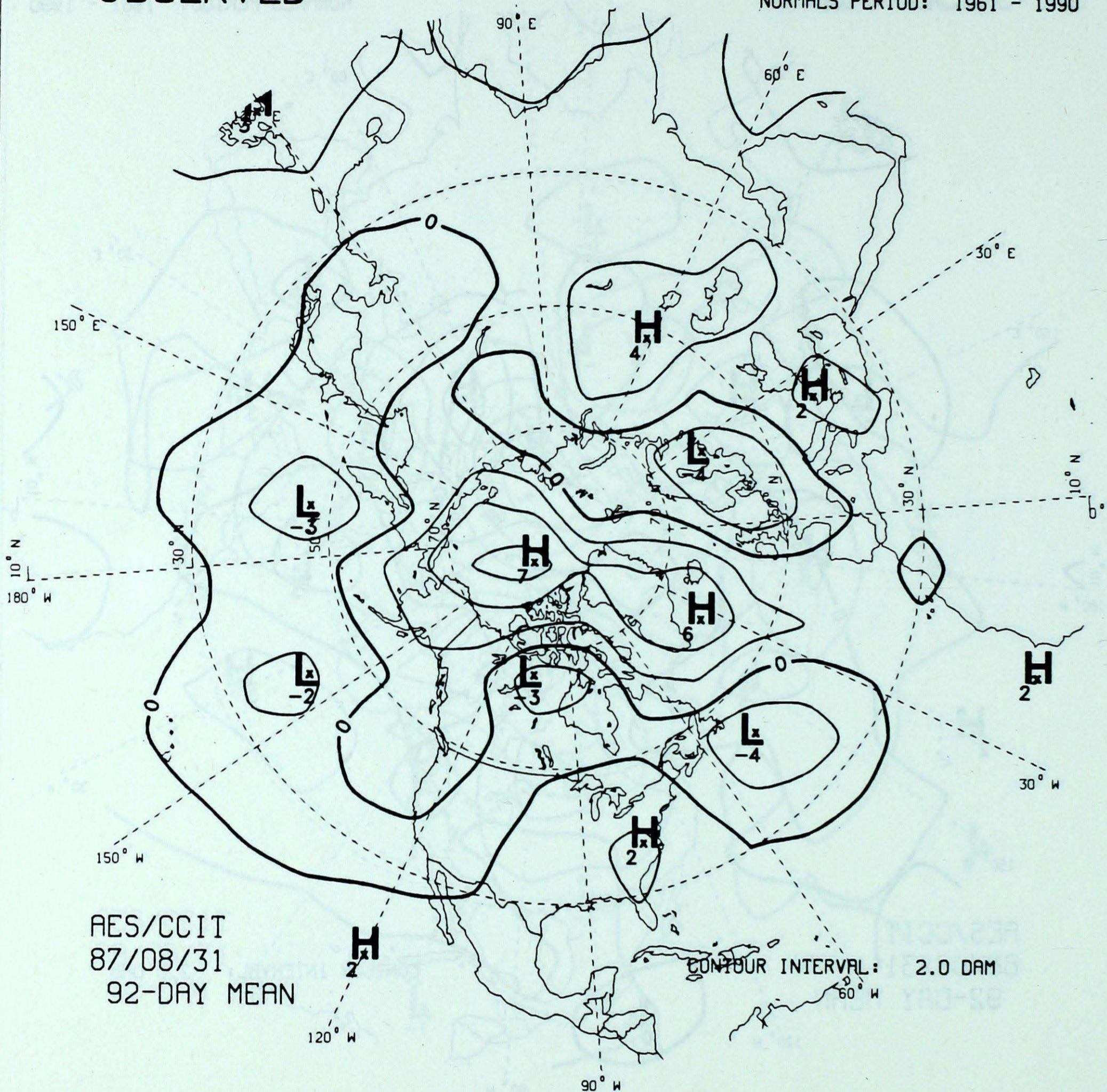
NORMALS PERIOD: 1961 - 1990



**50 KPA HEIGHT ANOMALY
01 JUN 87 TO 31 AUG 87
92-DAY MEAN**

OBSERVED

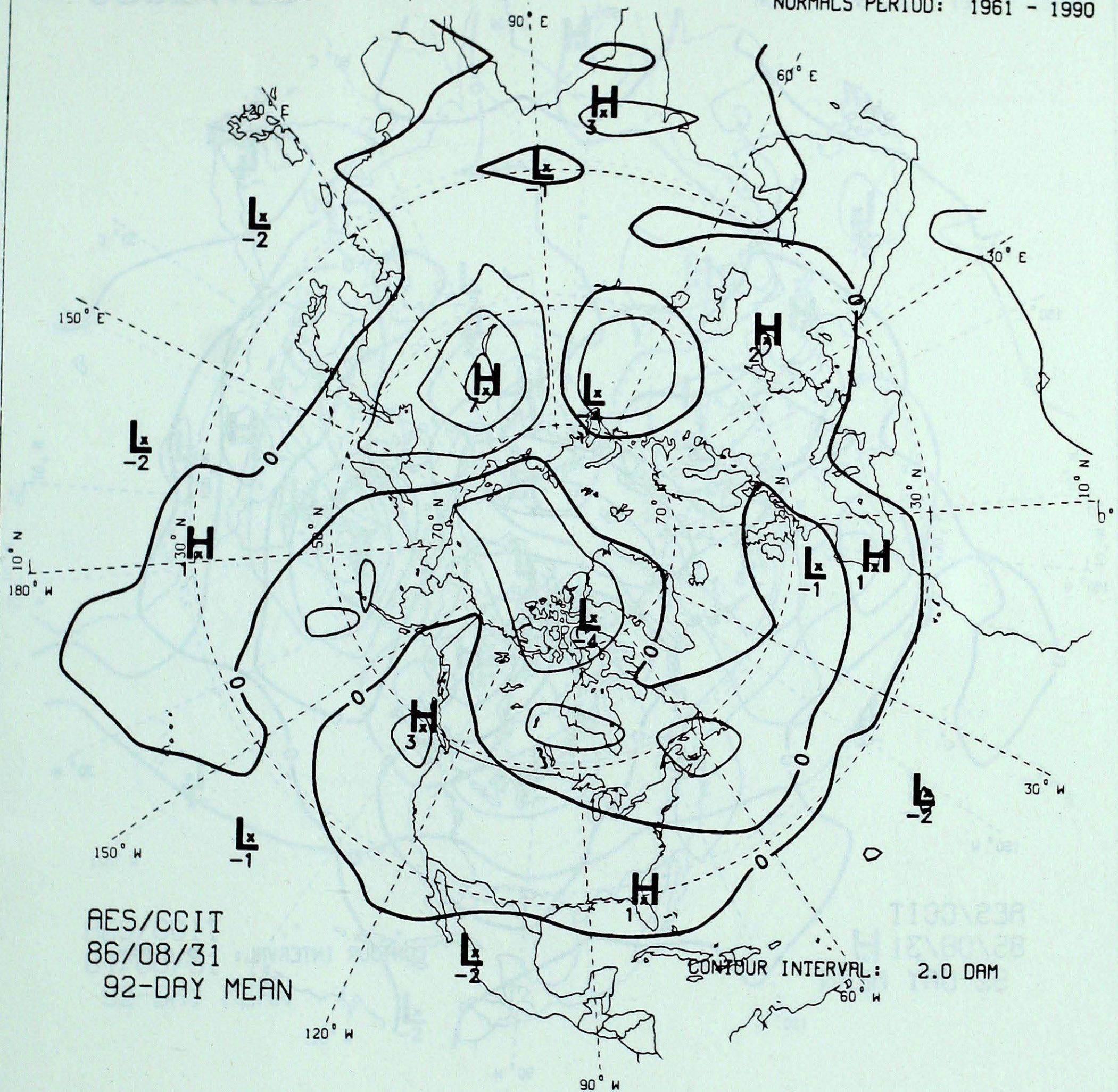
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 86 TO 31 AUG 86
92-DAY MEAN

OBSERVED

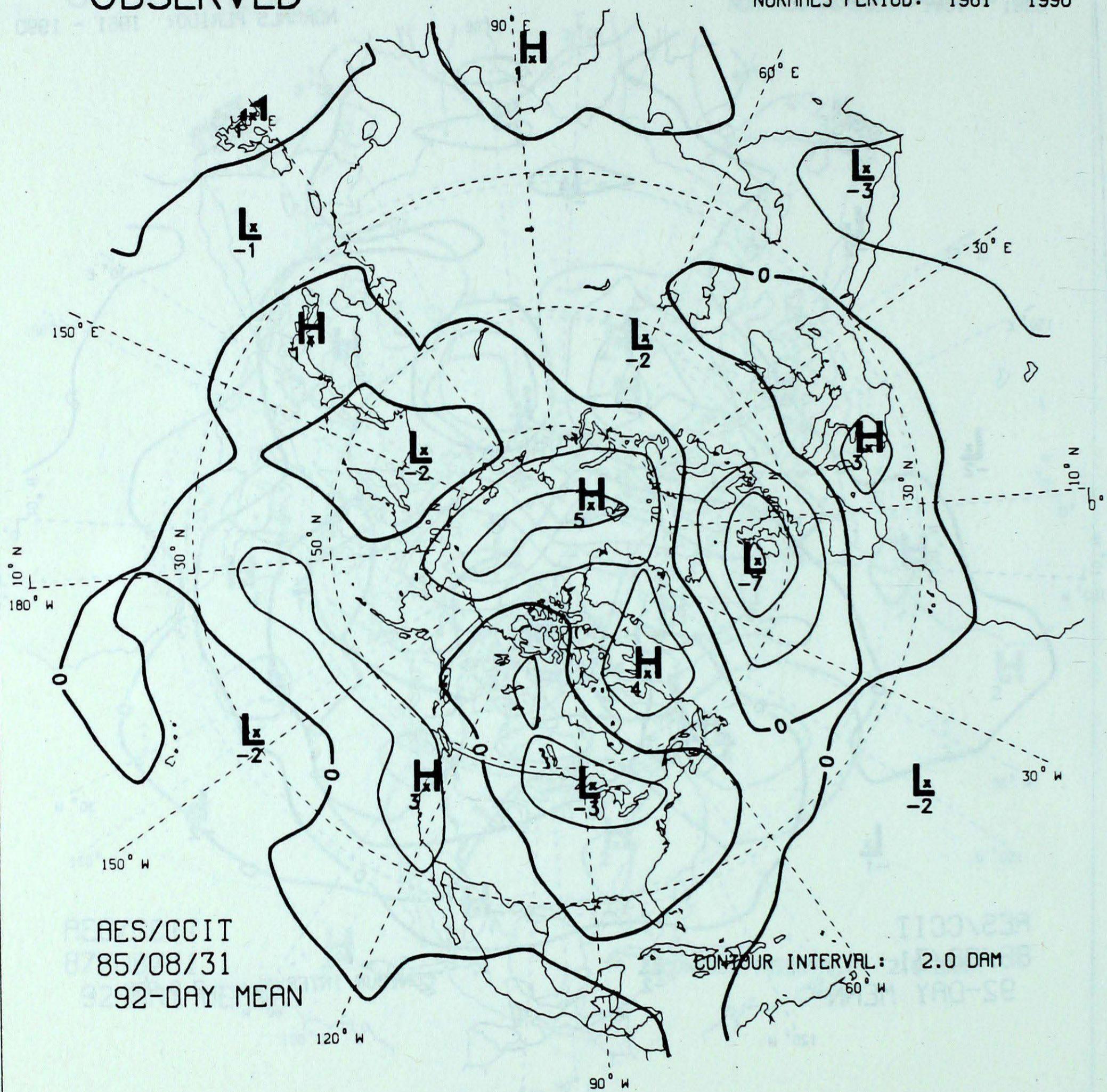
NORMALS PERIOD: 1961 - 1990



**50 KPA HEIGHT ANOMALY
01 JUN 85 TO 31 AUG 85
92-DAY MEAN**

OBSERVED

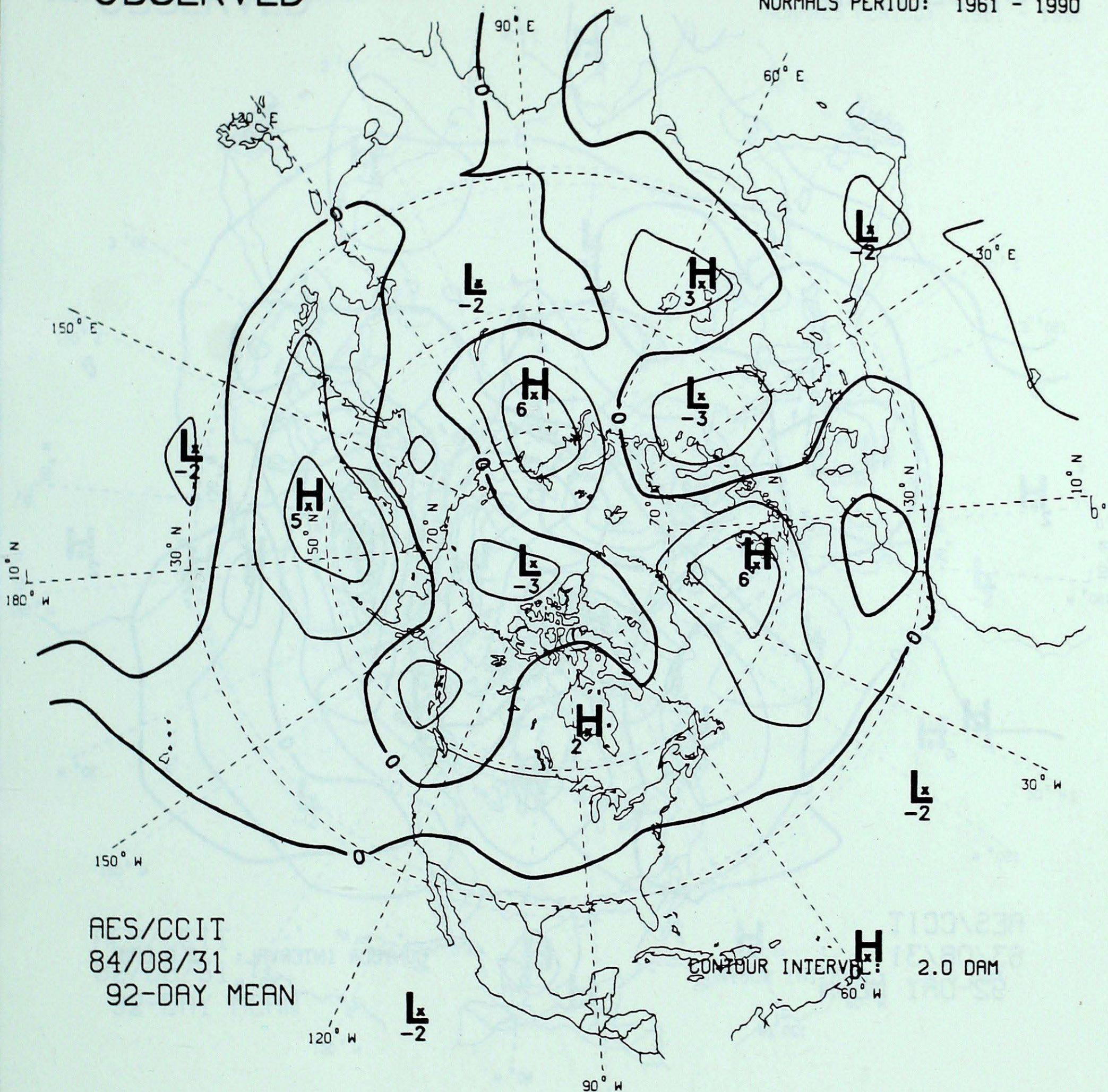
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 84 TO 31 AUG 84
92-DAY MEAN

OBSERVED

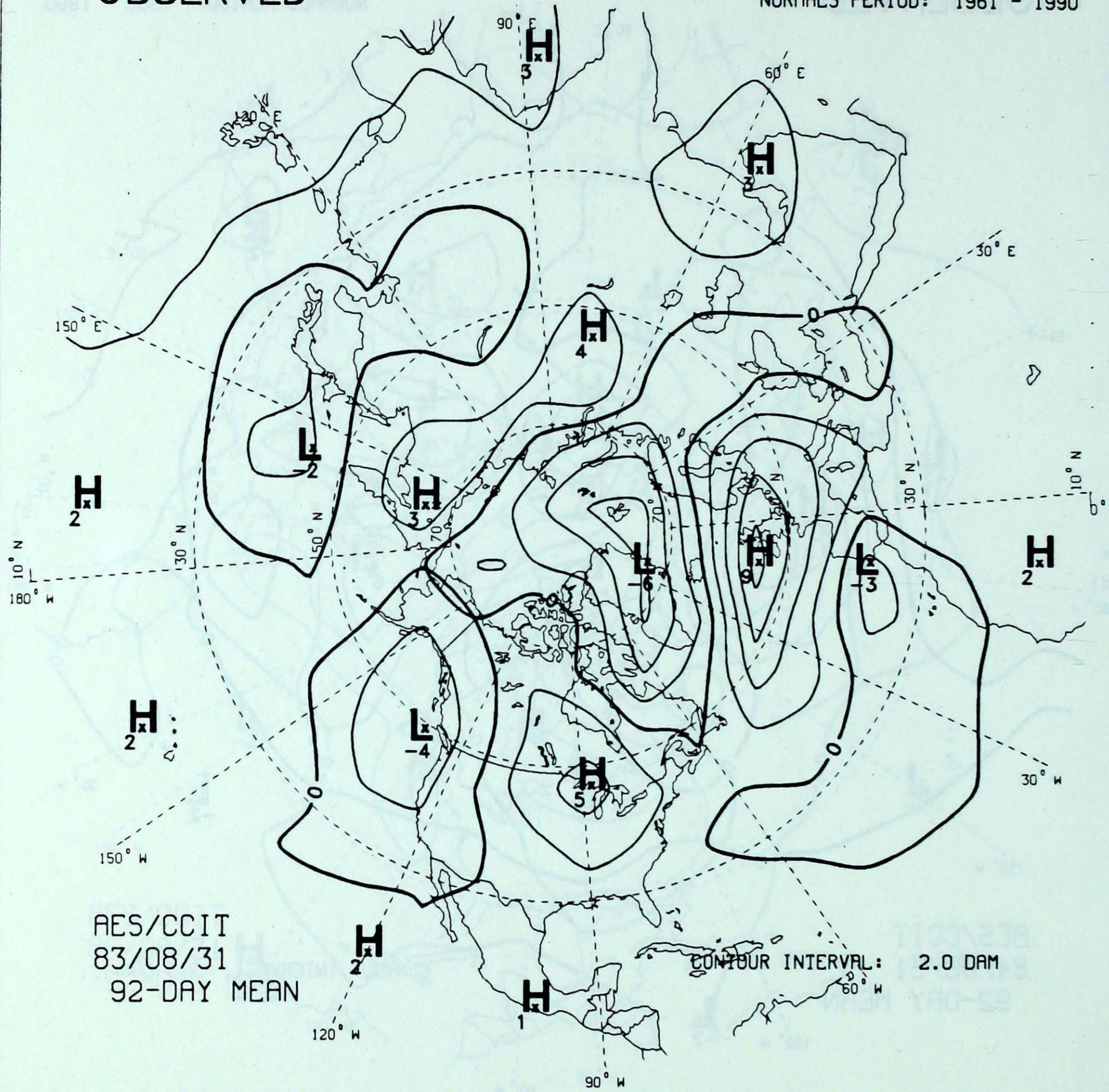
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 83 TO 31 AUG 83
92-DAY MEAN

OBSERVED

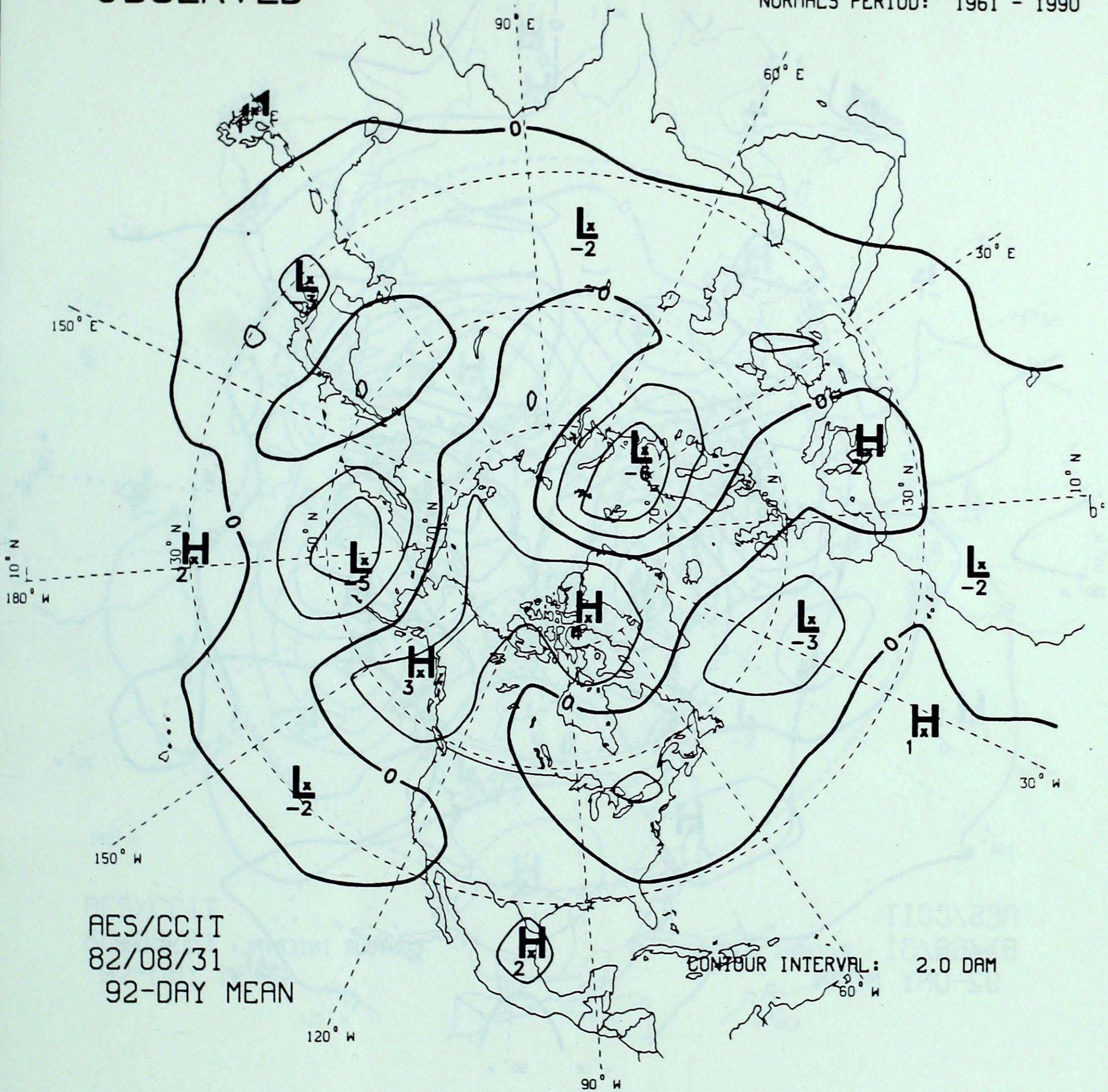
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 82 TO 31 AUG 82
92-DAY MEAN

OBSERVED

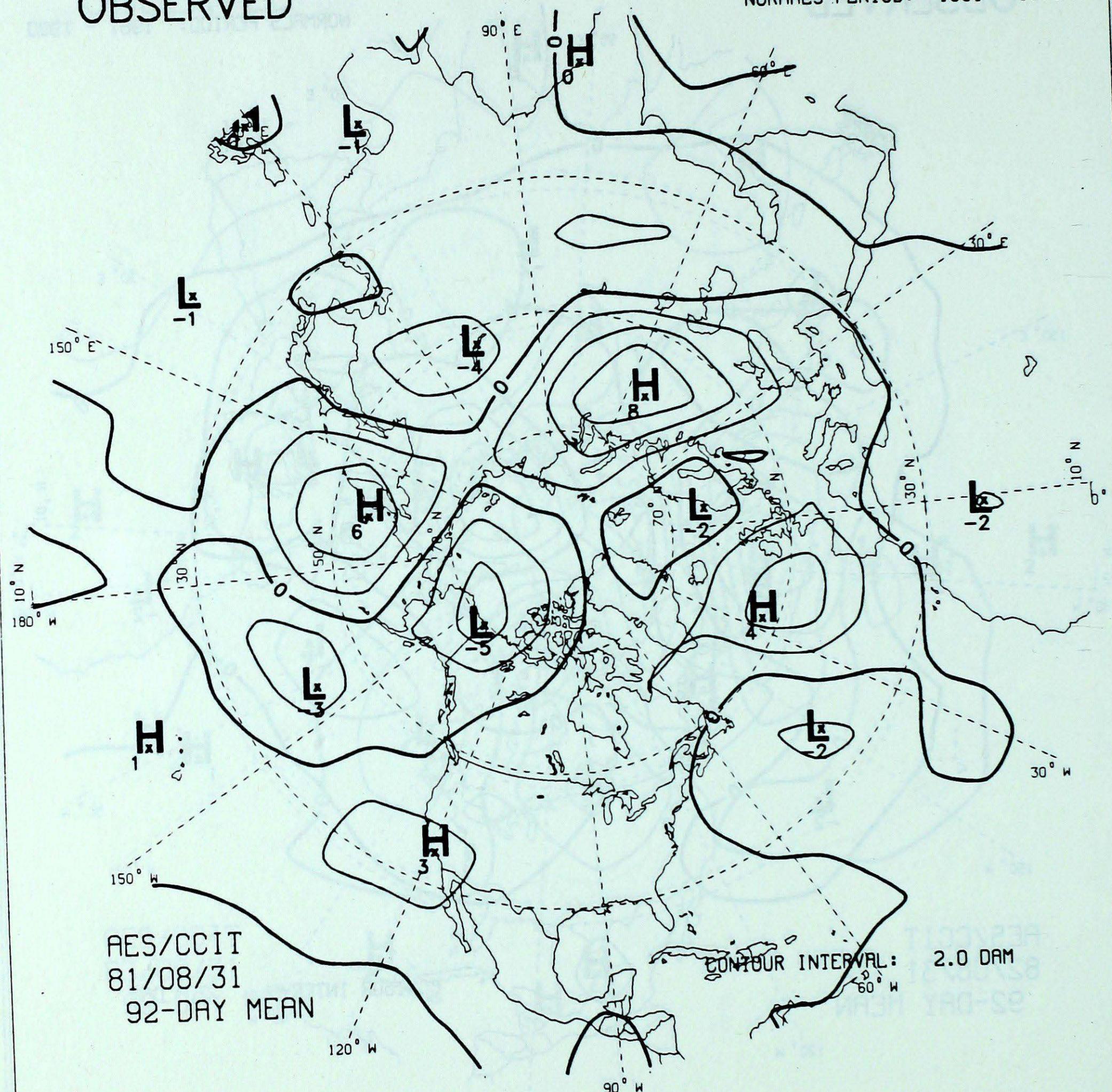
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 81 TO 31 AUG 81
92-DAY MEAN

OBSERVED

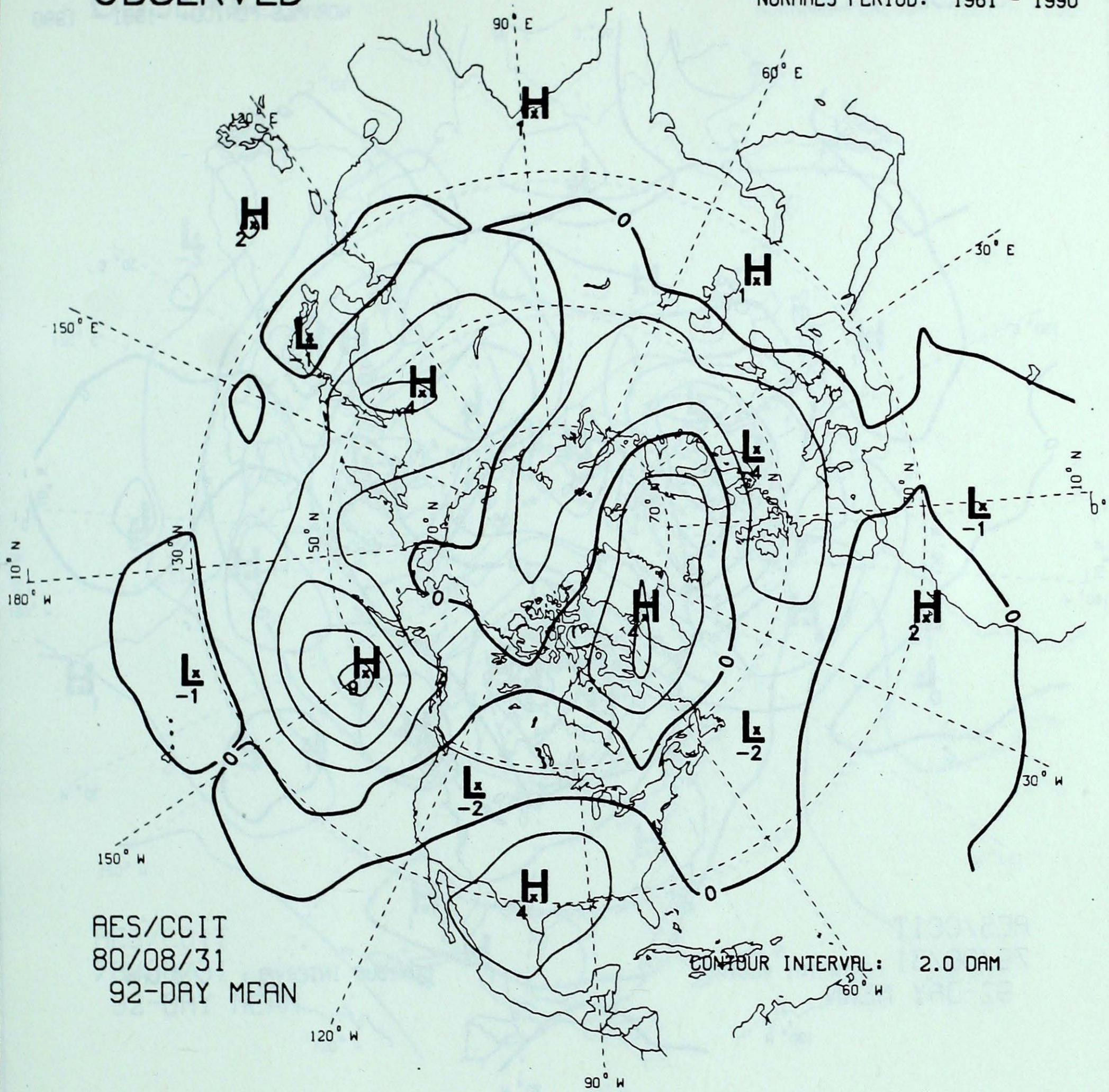
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 80 TO 31 AUG 80
92-DAY MEAN

OBSERVED

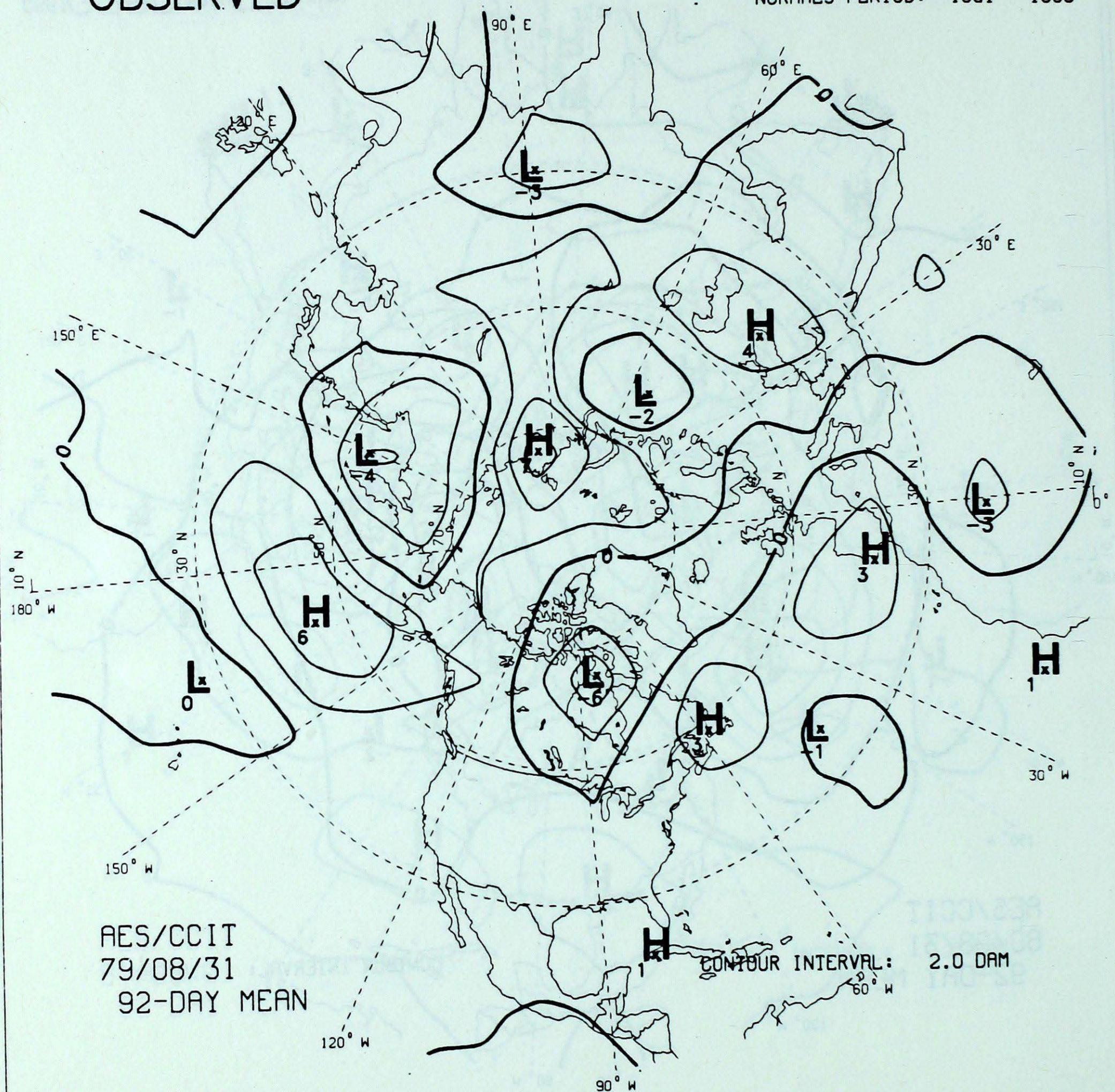
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 79 TO 31 AUG 79
92-DAY MEAN

OBSERVED

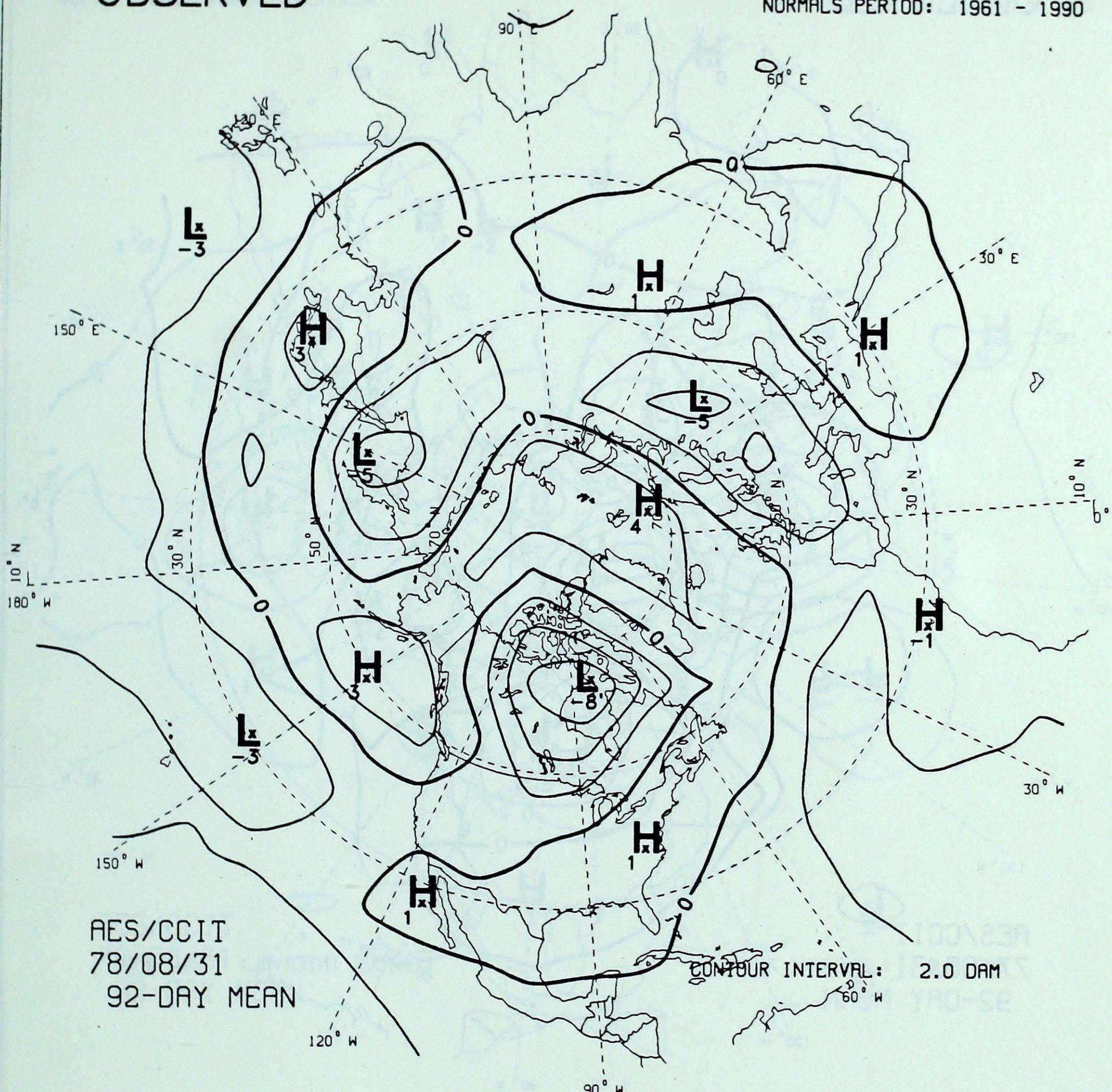
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 78 TO 31 AUG 78
92-DAY MEAN

OBSERVED

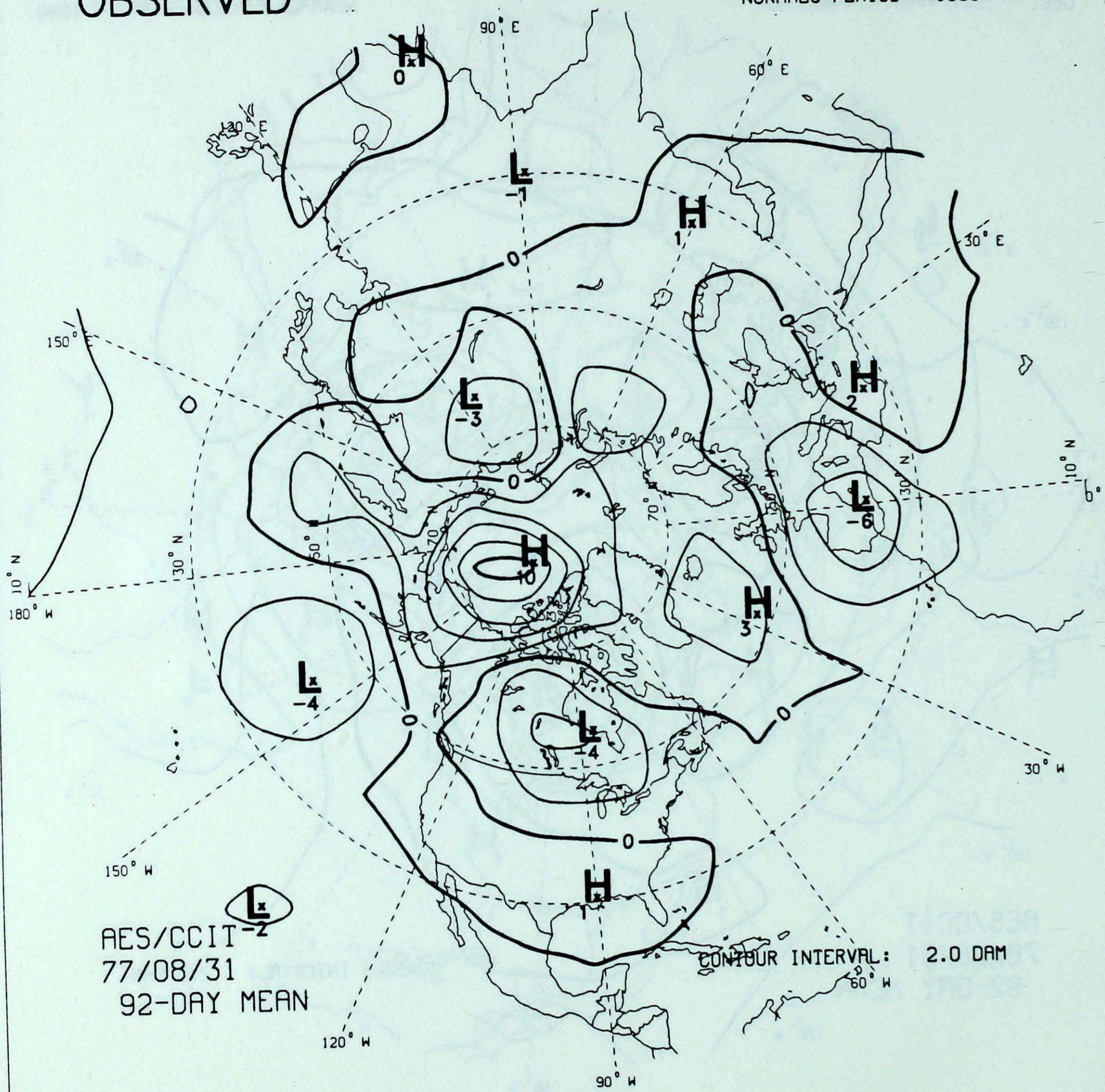
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 77 TO 31 AUG 77
92-DAY MEAN

OBSERVED

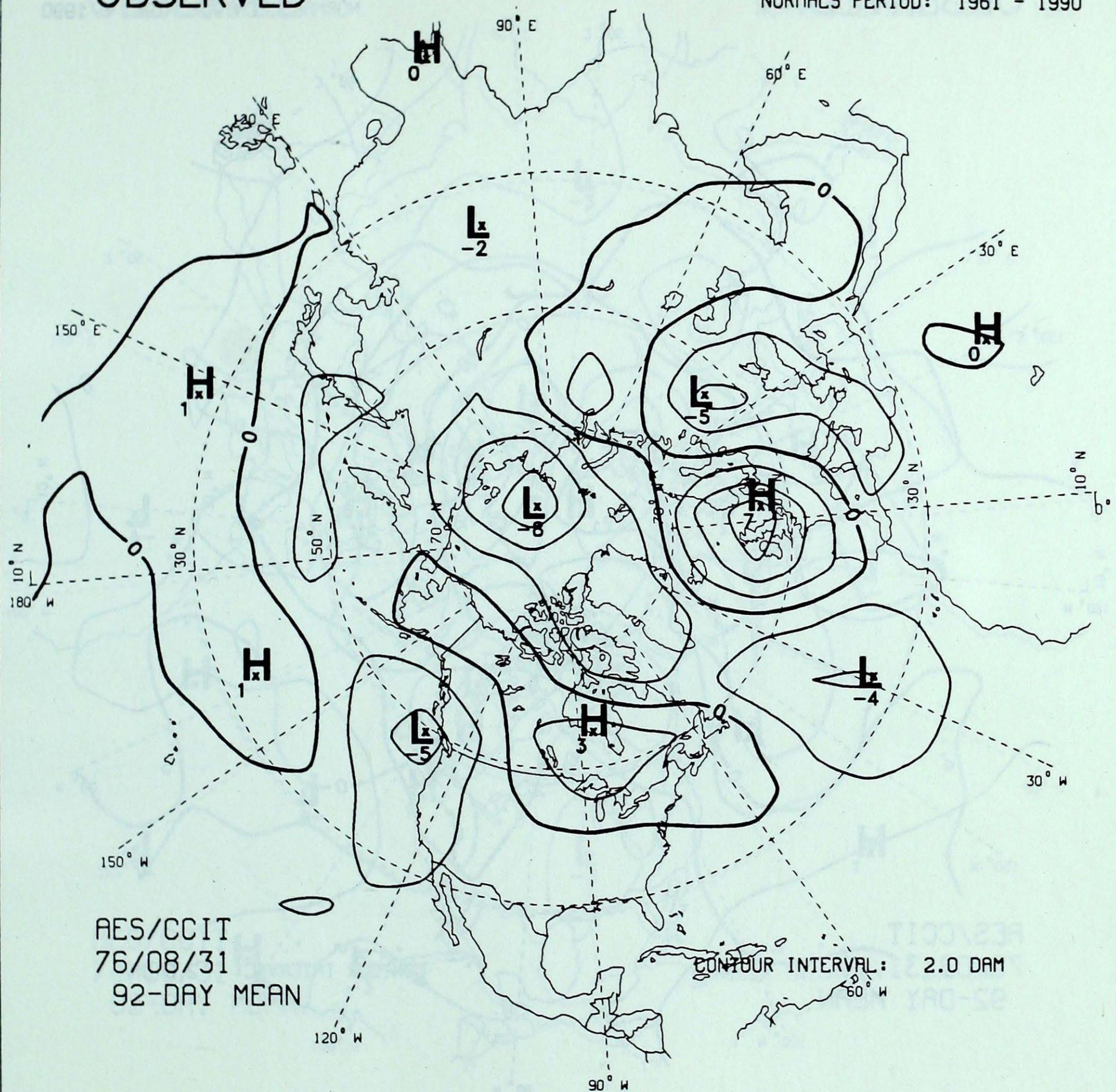
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 76 TO 31 AUG 76
92-DAY MEAN

OBSERVED

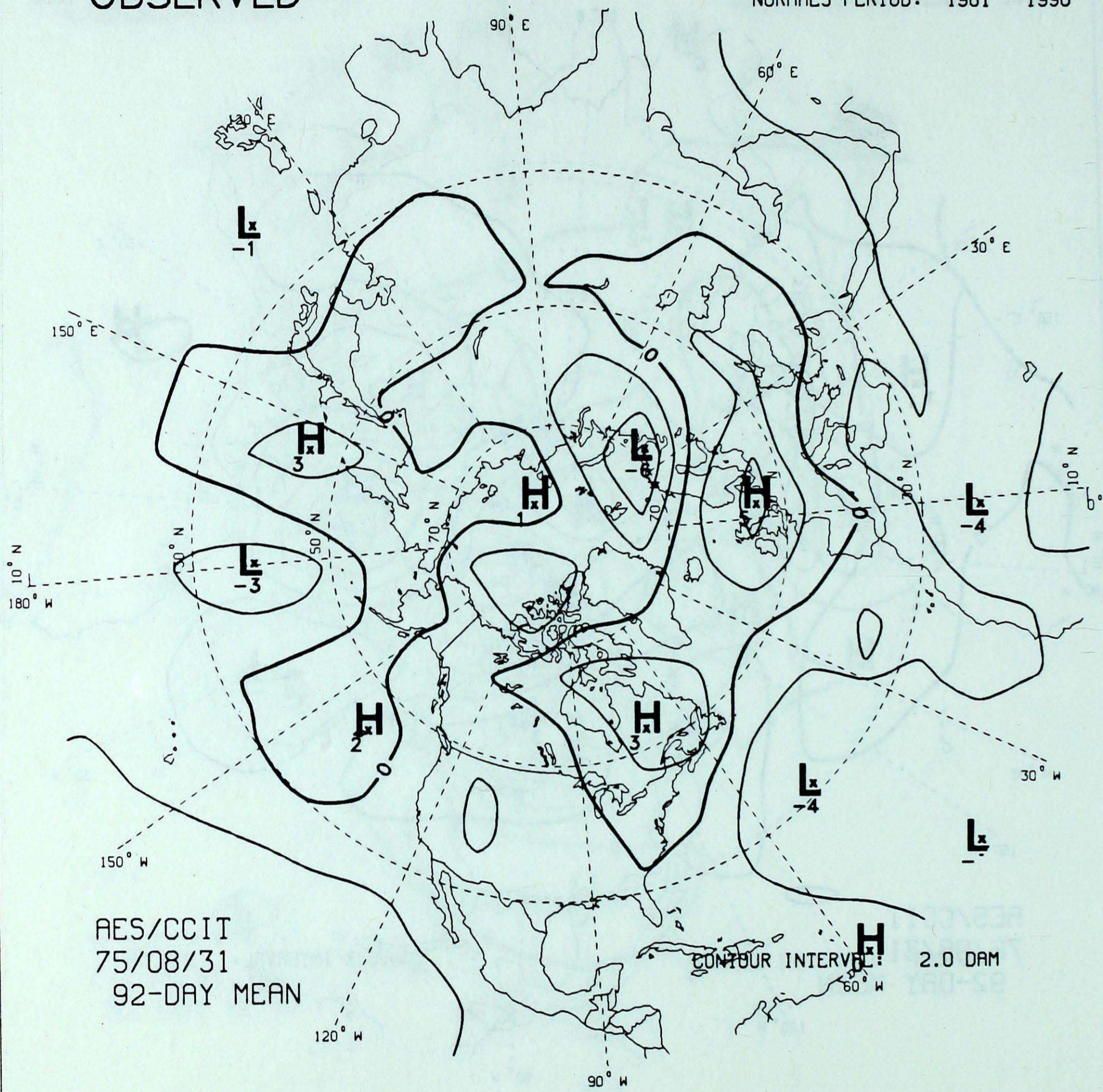
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 75 TO 31 AUG 75
92-DAY MEAN

OBSERVED

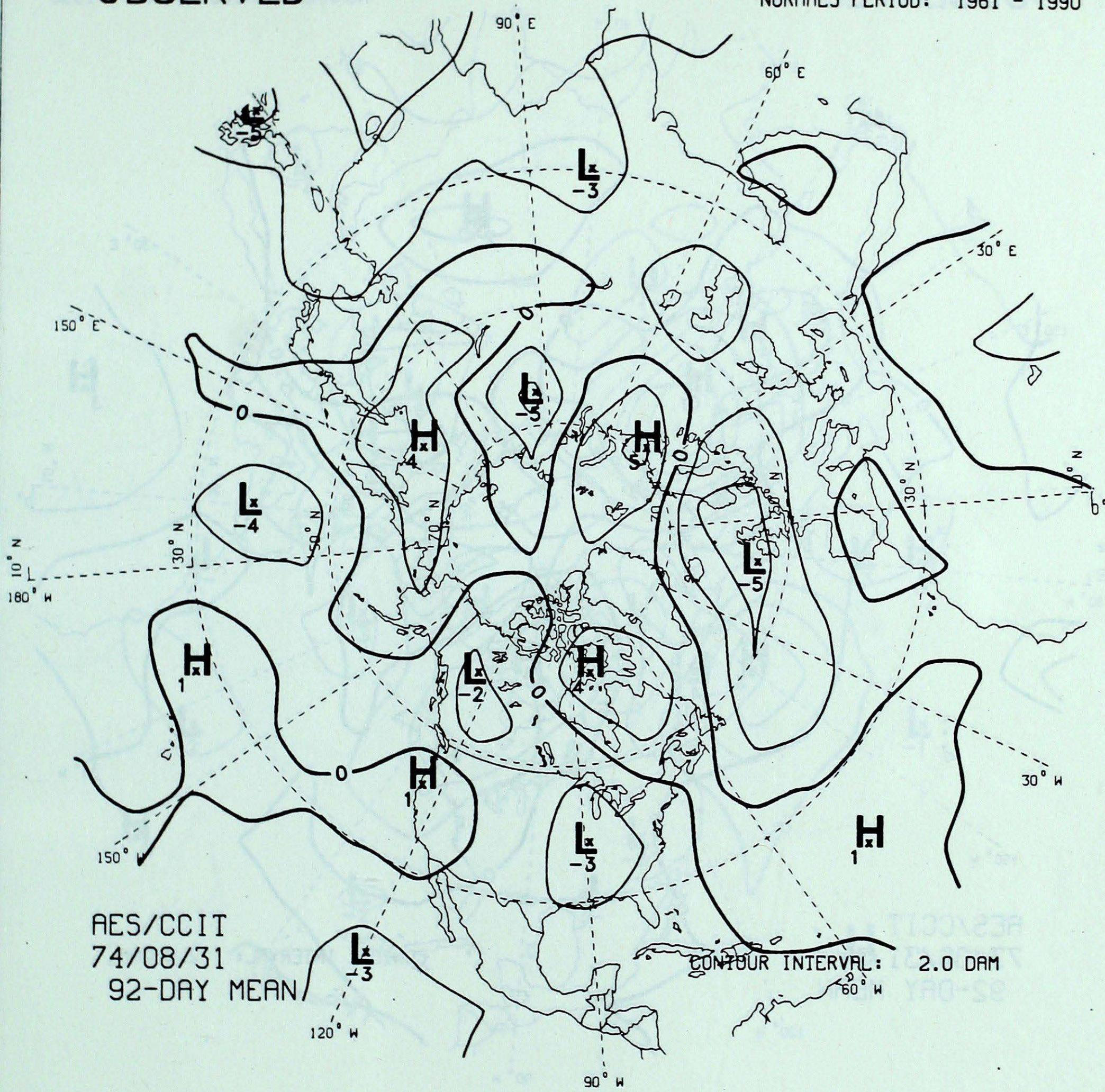
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 74 TO 31 AUG 74
92-DAY MEAN

OBSERVED

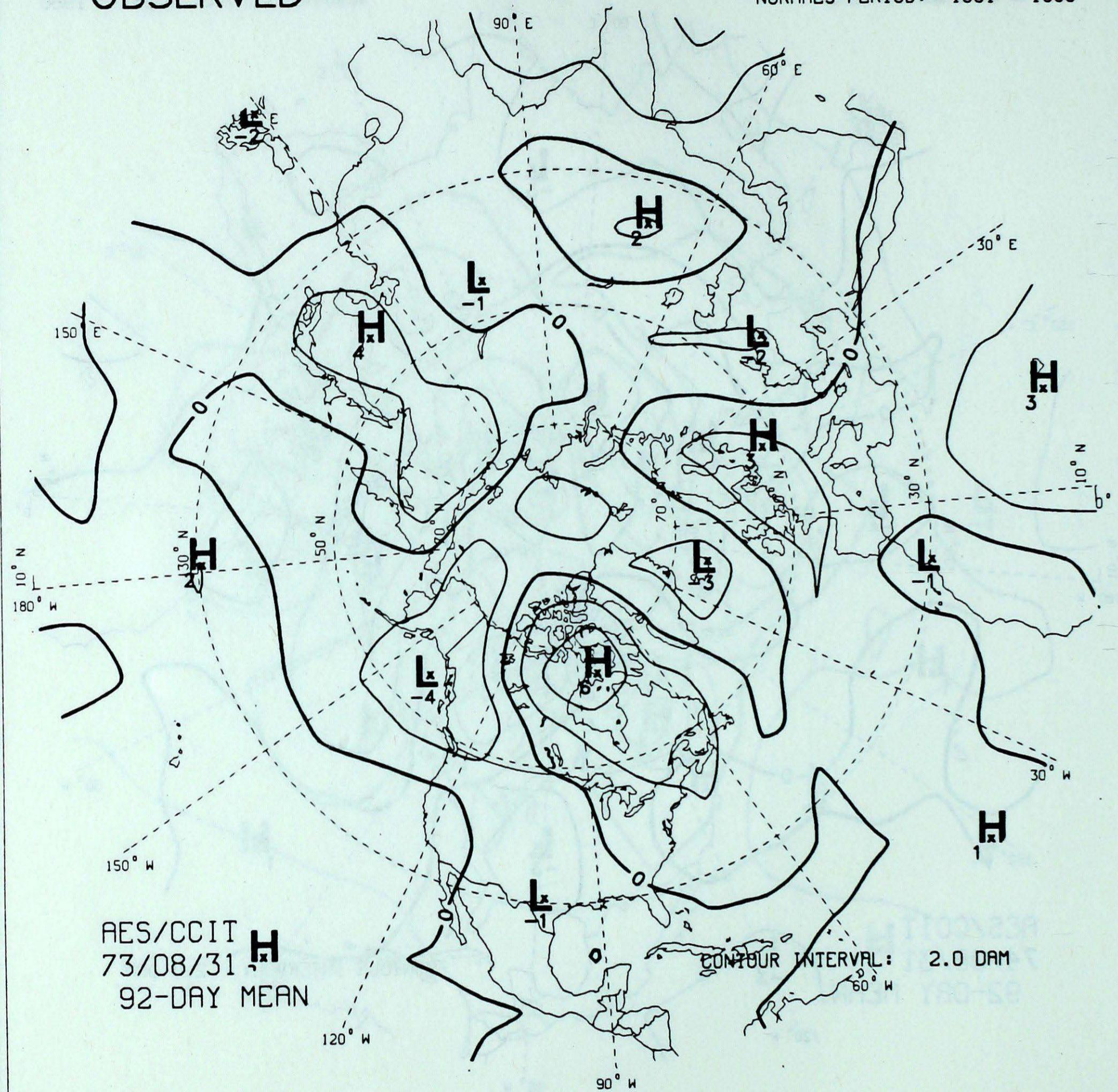
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 73 TO 31 AUG 73
92-DAY MEAN

OBSERVED

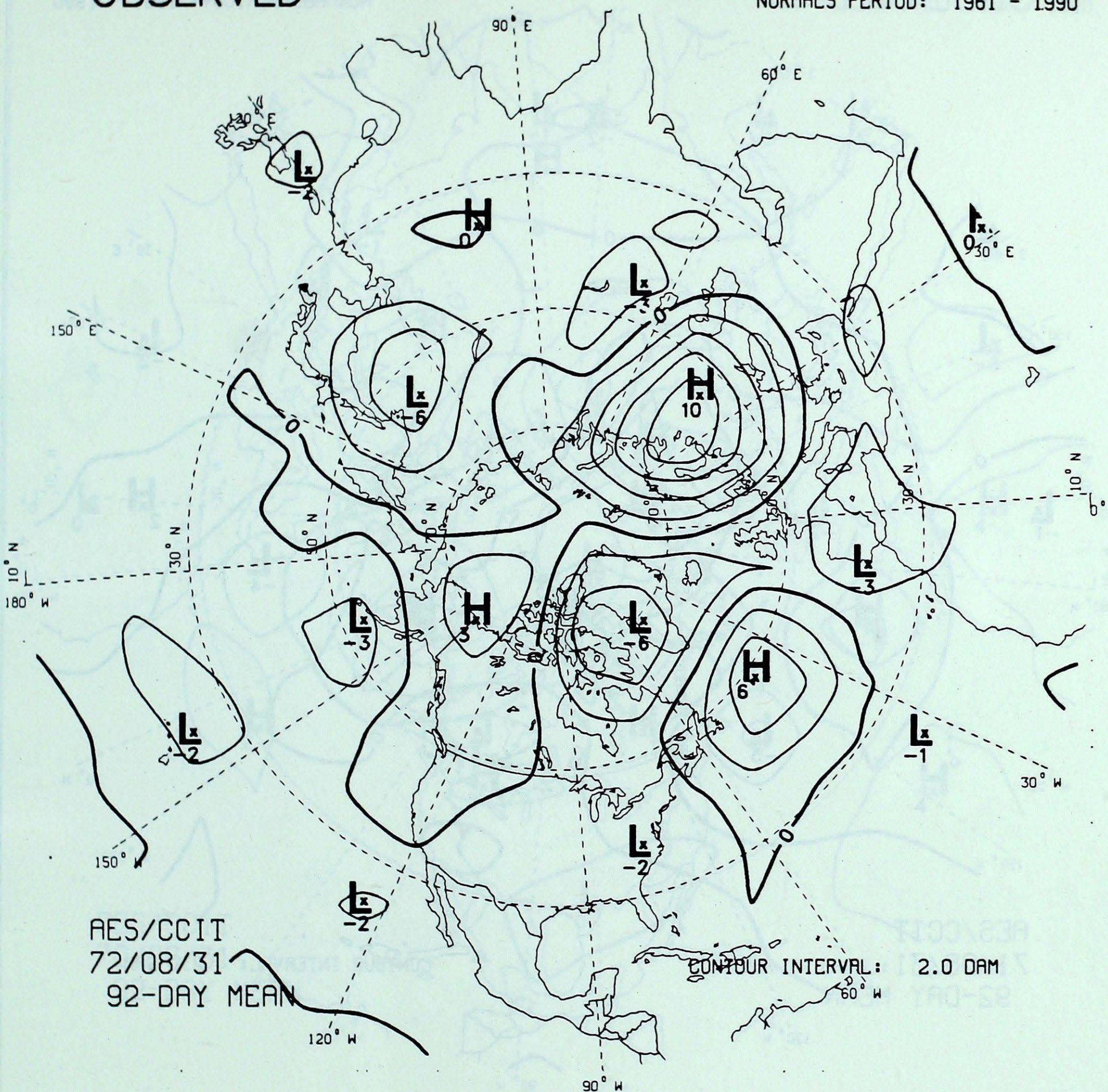
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 72 TO 31 AUG 72
92-DAY MEAN

OBSERVED

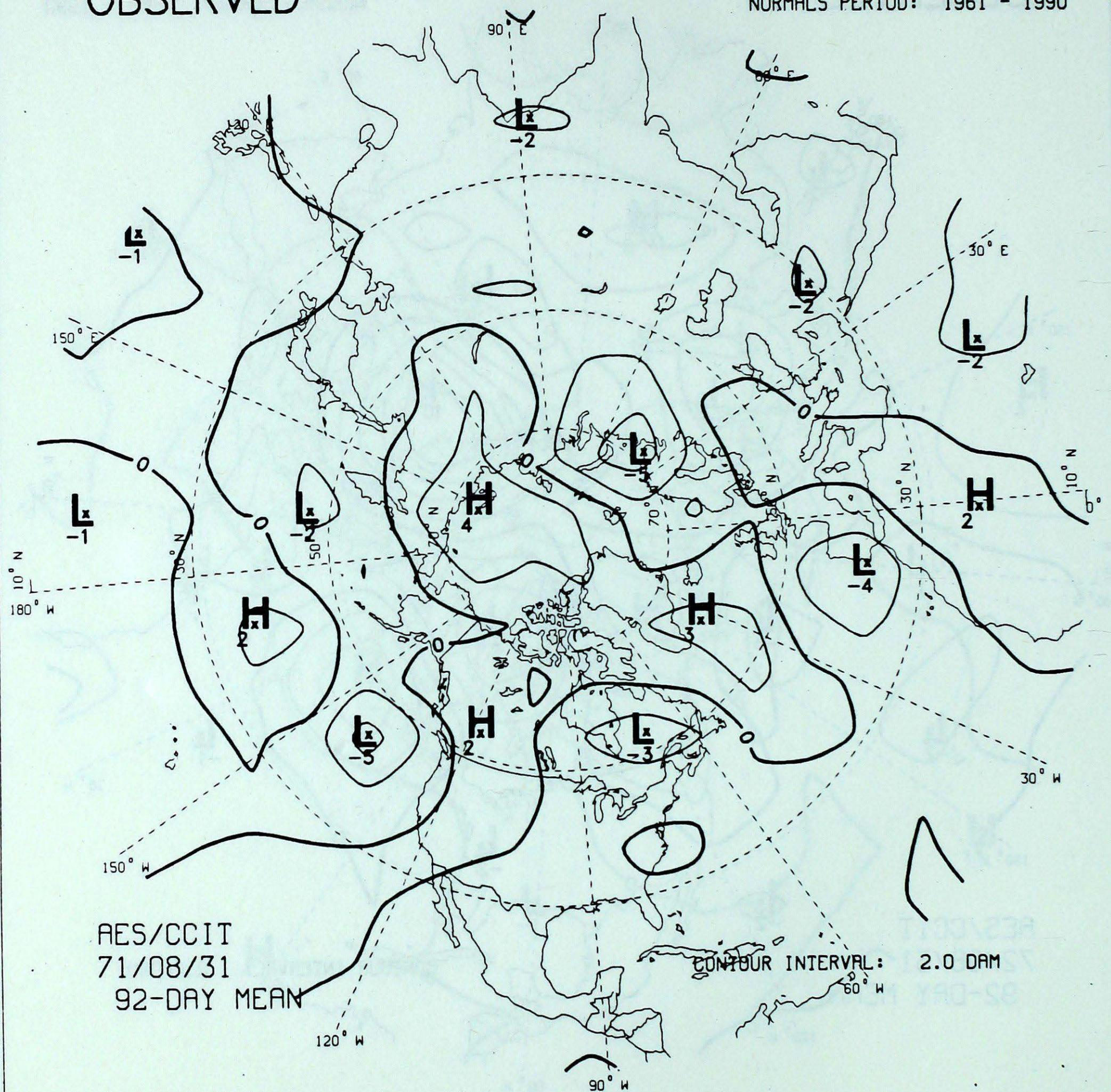
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 71 TO 31 AUG 71
92-DAY MEAN

OBSERVED

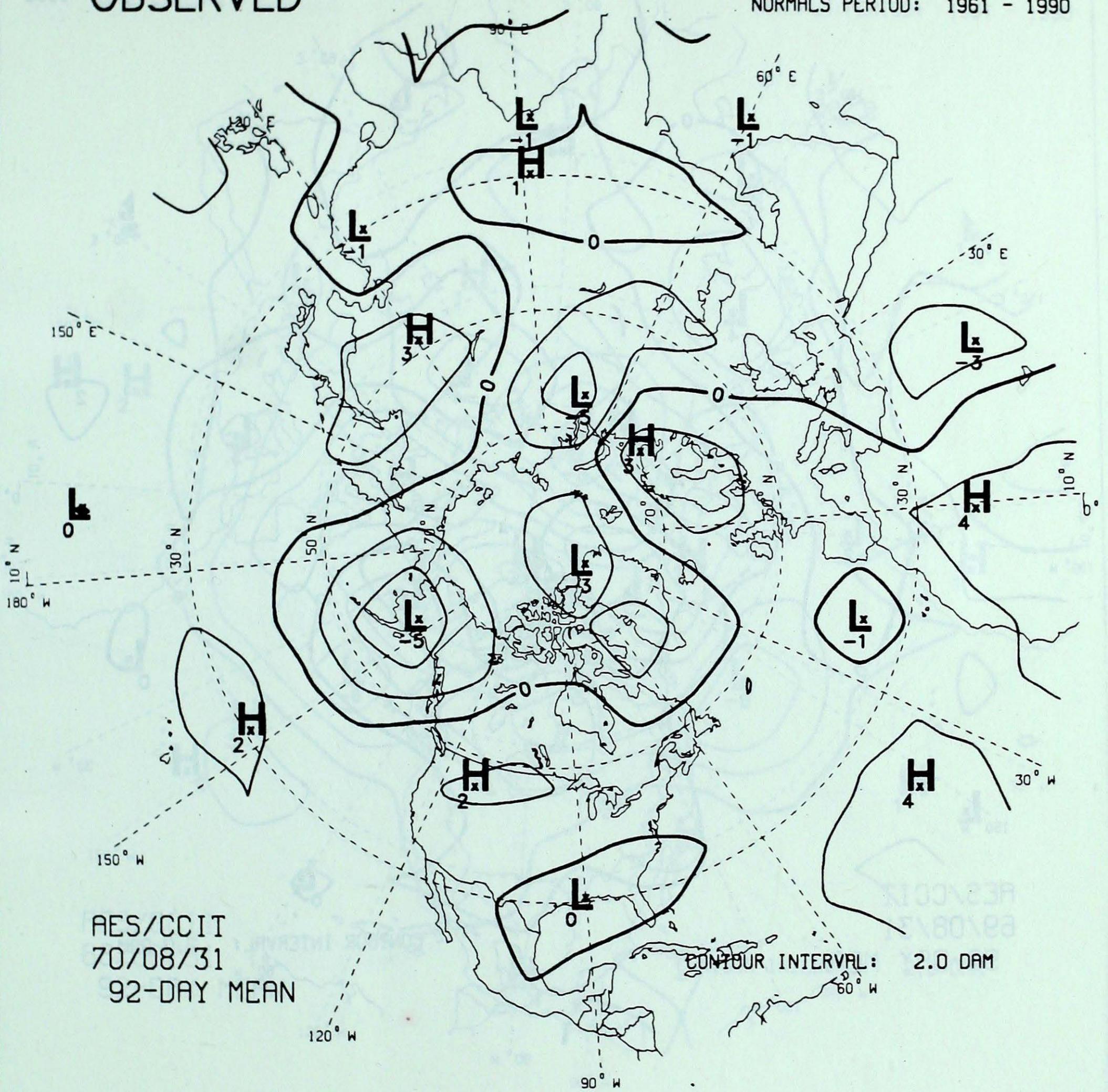
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 70 TO 31 AUG 70
92-DAY MEAN

OBSERVED

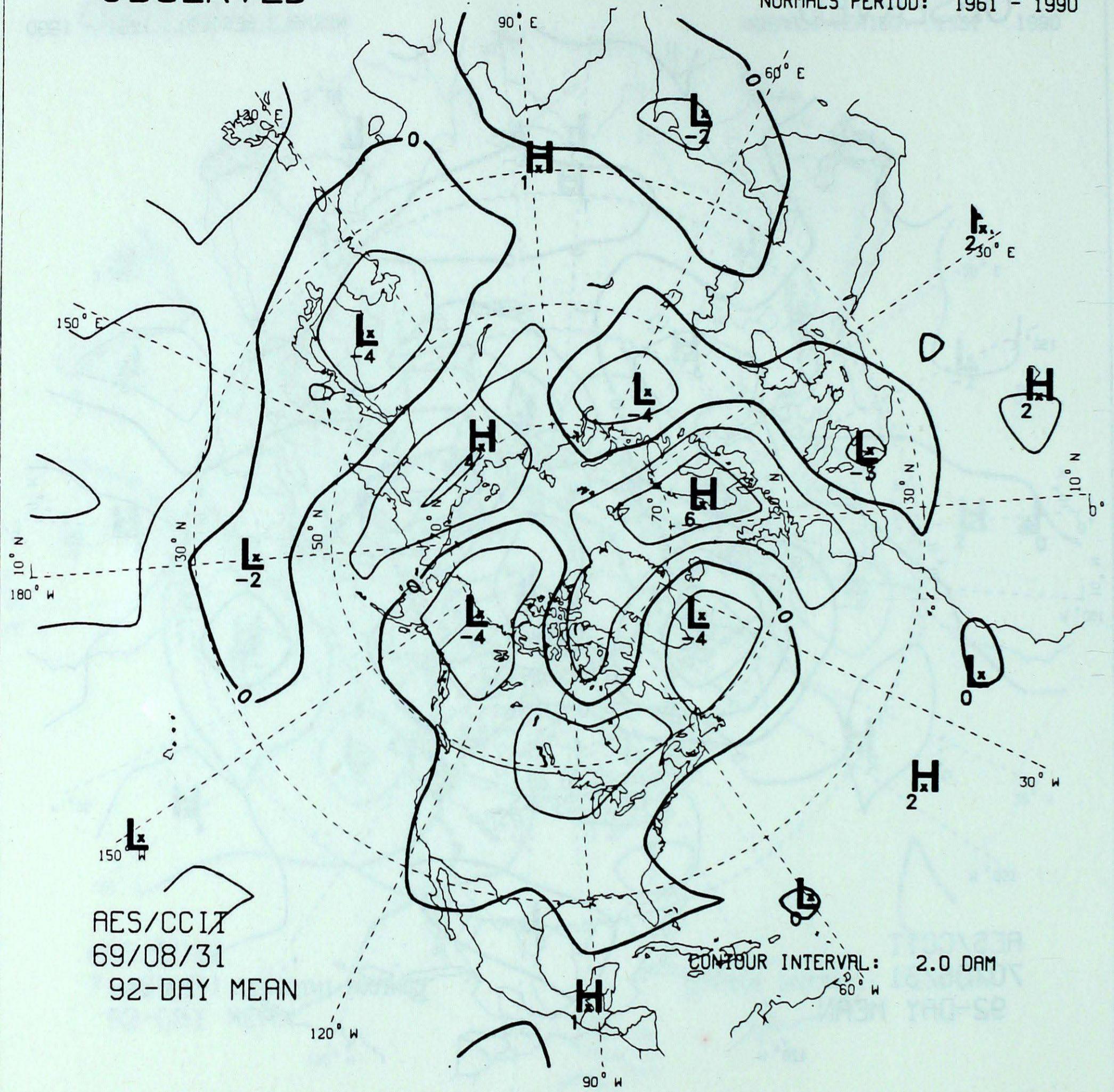
NORMALS PERIOD: 1961 - 1990



**50 KPA HEIGHT ANOMALY
01 JUN 69 TO 31 AUG 69
92-DAY MEAN**

OBSERVED

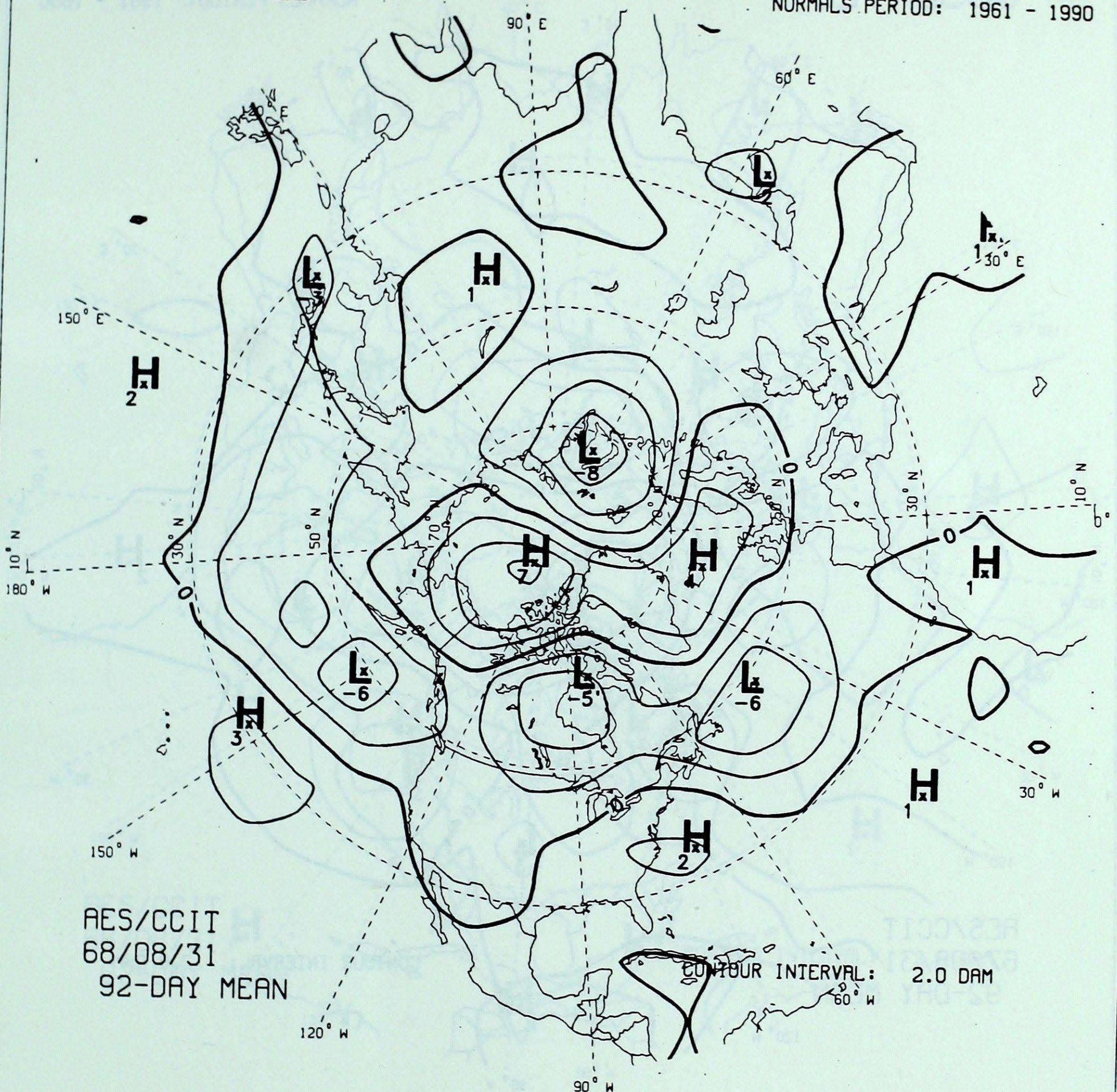
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 68 TO 31 AUG 68
92-DAY MEAN

OBSERVED

NORMALS PERIOD: 1961 - 1990

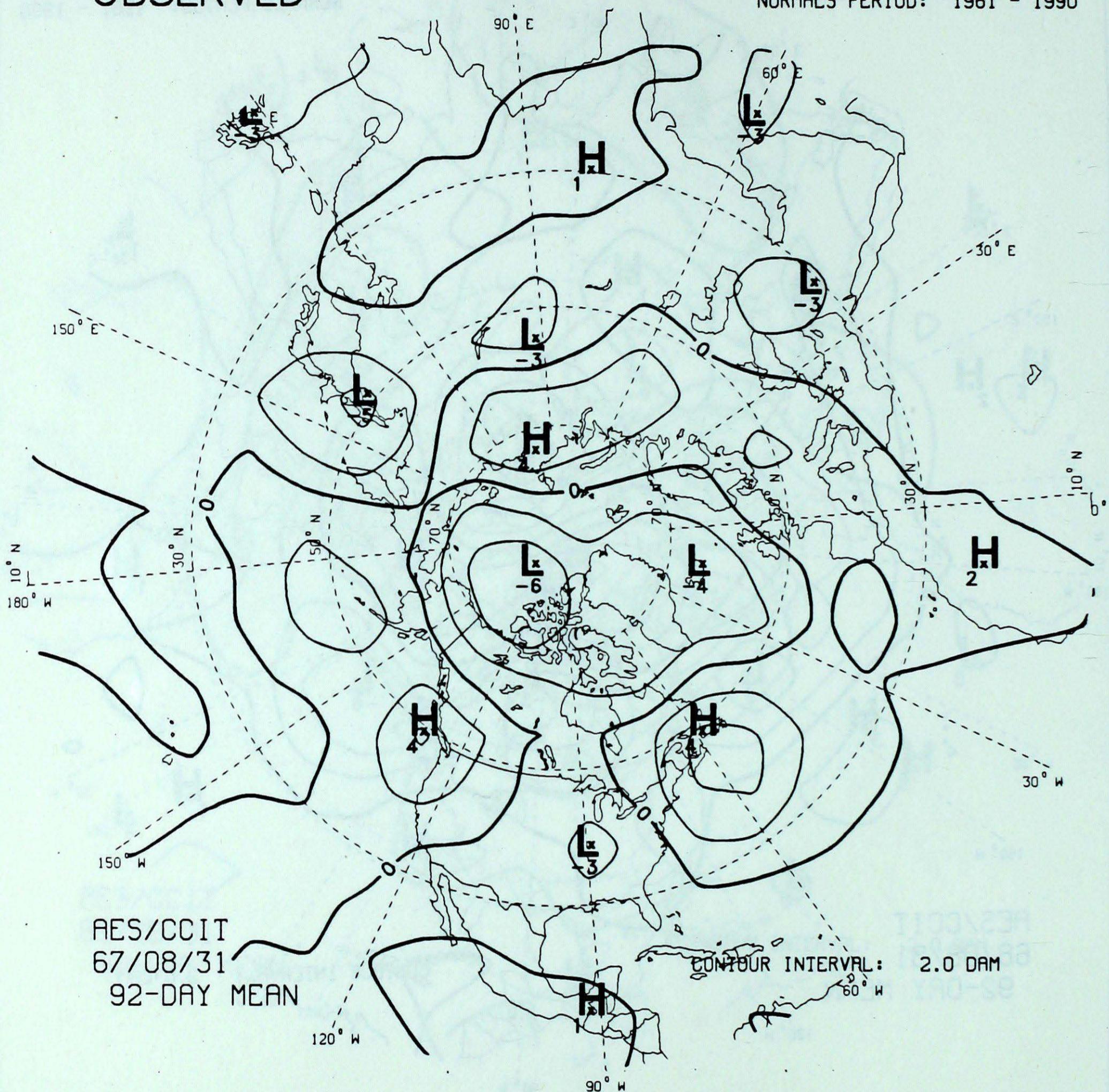


AES/CCIT
68/08/31
92-DAY MEAN

50 KPA HEIGHT ANOMALY
01 JUN 67 TO 31 AUG 67
92-DAY MEAN

OBSERVED

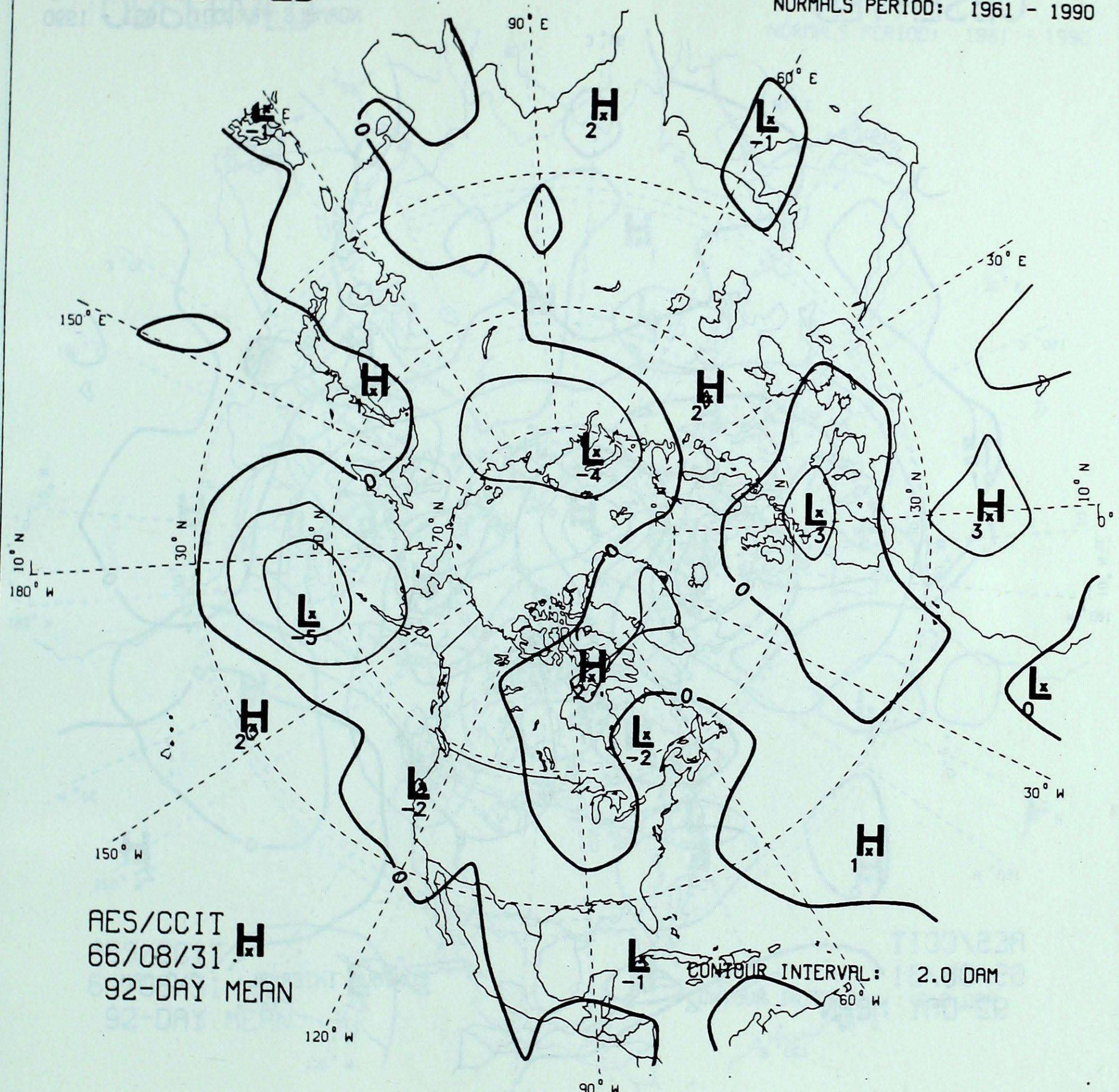
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 66 TO 31 AUG 66
92-DAY MEAN

OBSERVED

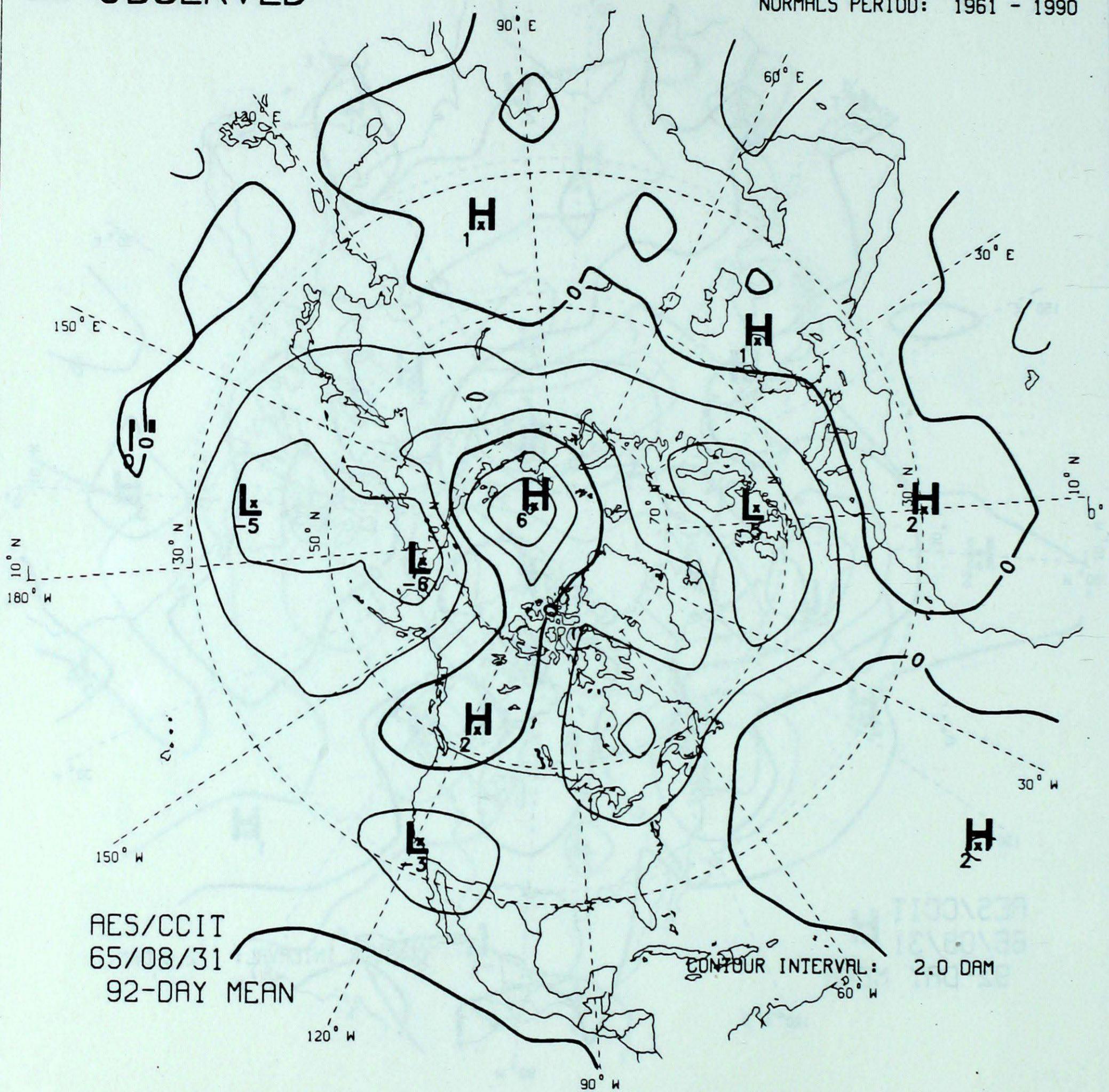
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 65 TO 31 AUG 65
92-DAY MEAN

OBSERVED

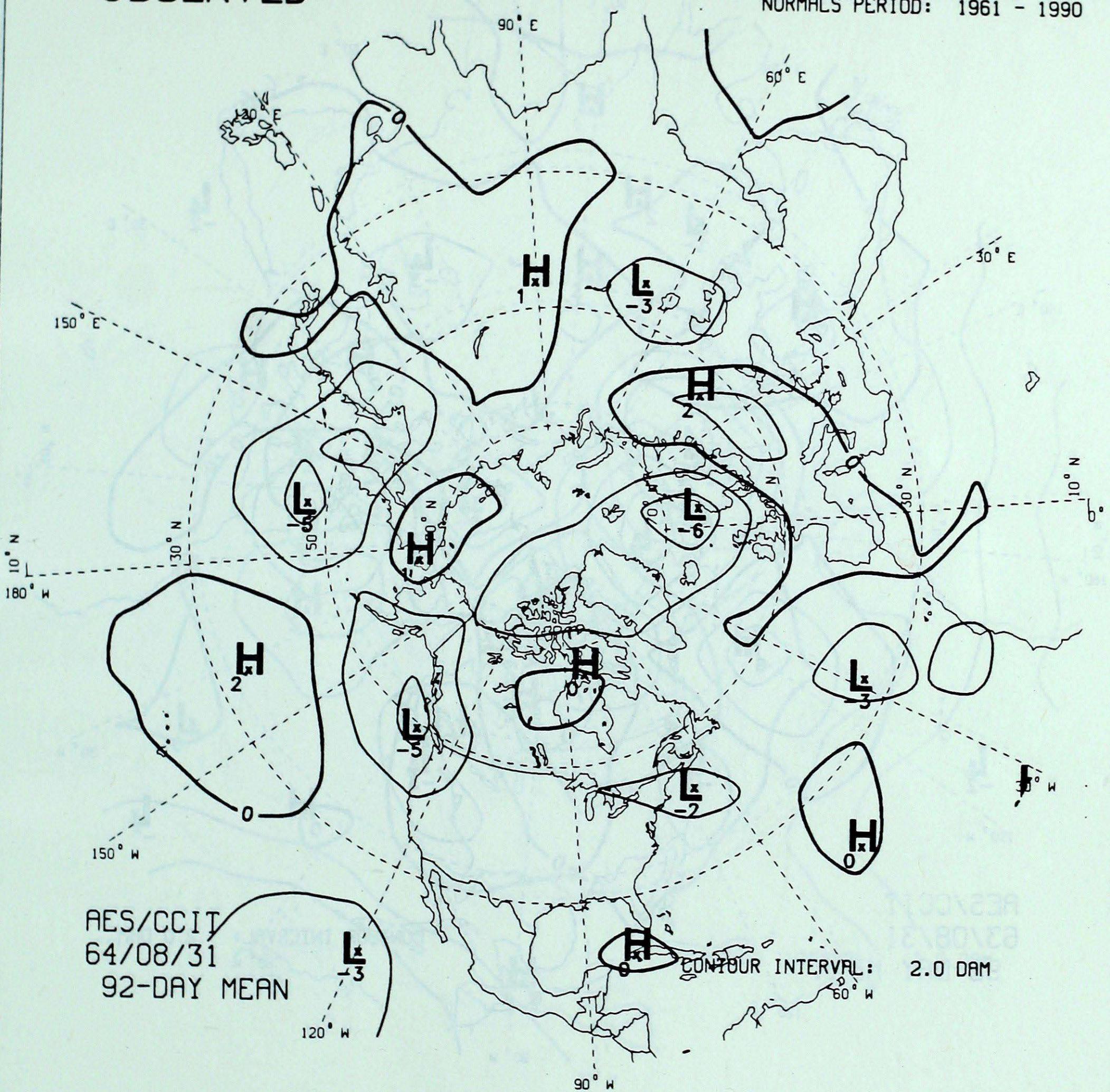
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 64 TO 31 AUG 64
92-DAY MEAN

OBSERVED

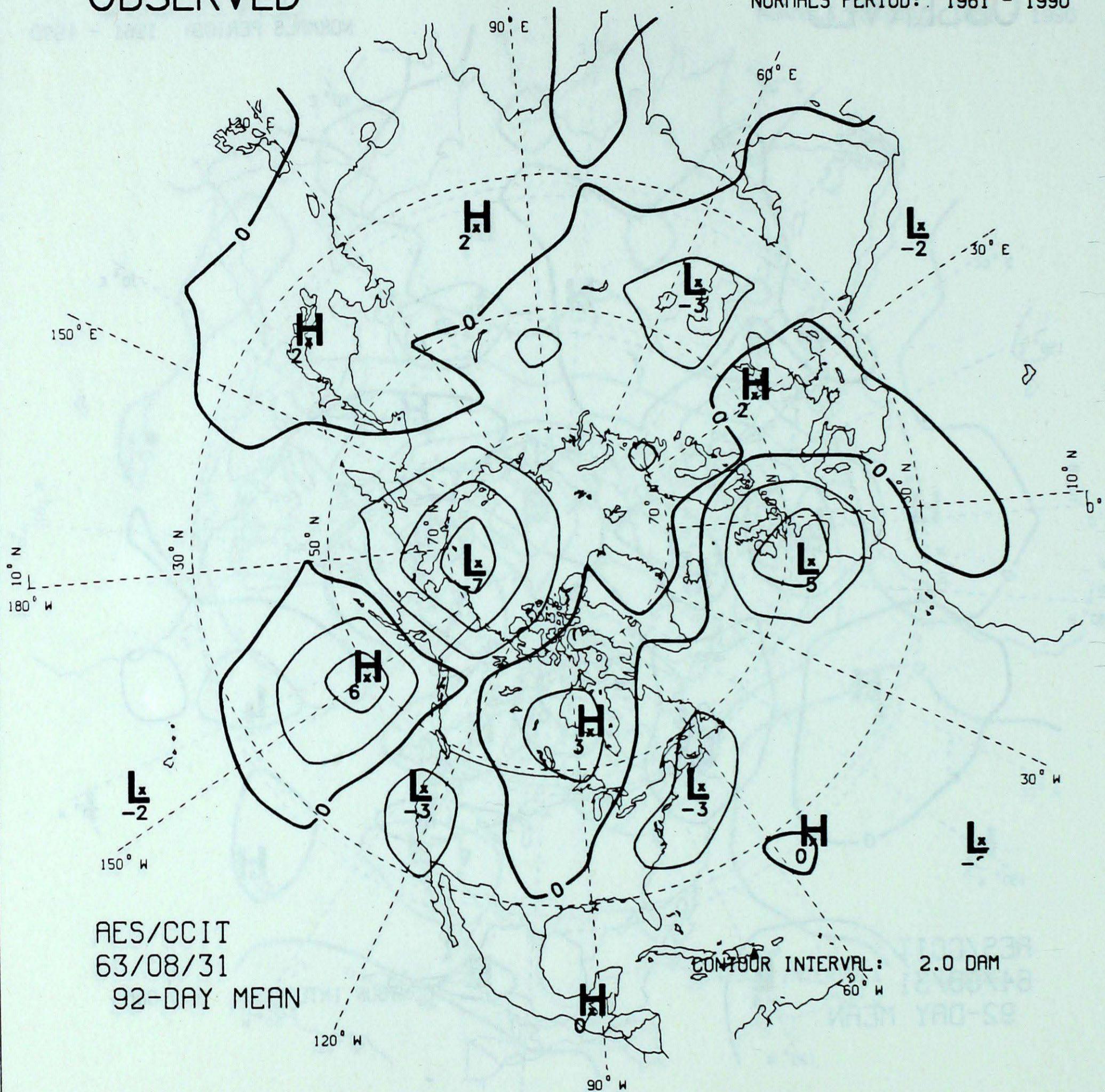
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 63 TO 31 AUG 63
92-DAY MEAN

OBSERVED

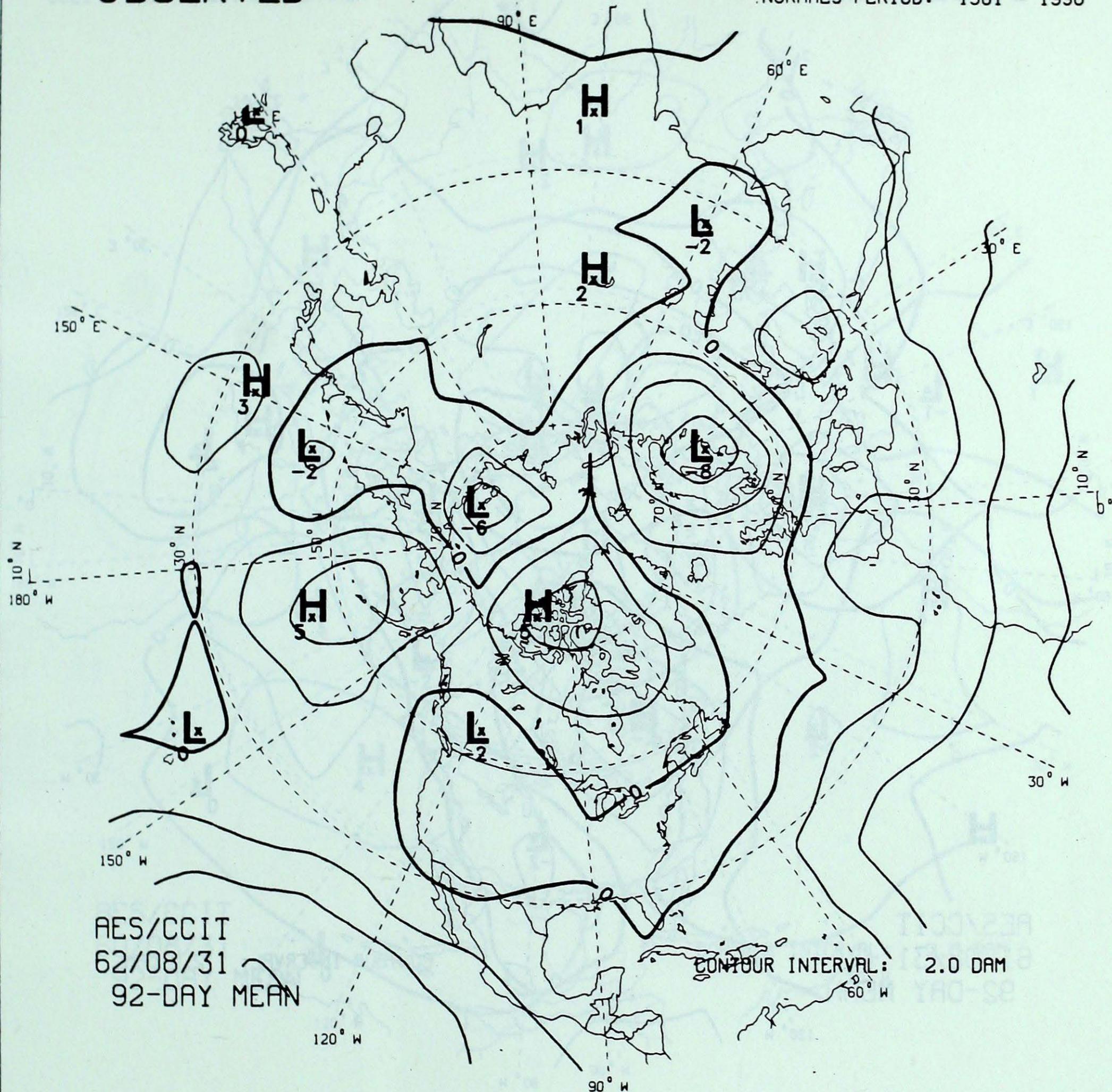
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 62 TO 31 AUG 62
92-DAY MEAN

OBSERVED

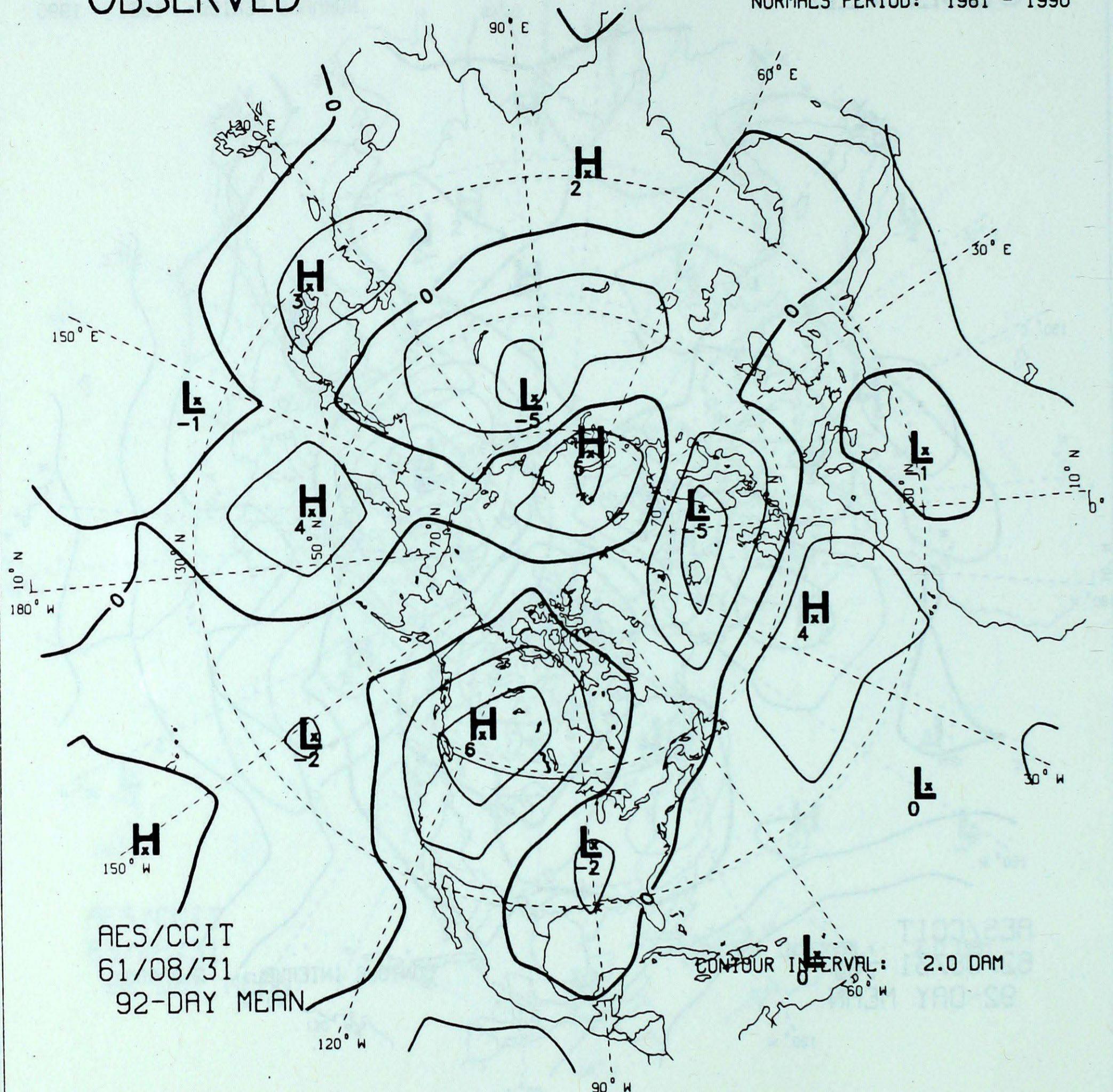
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 61 TO 31 AUG 61
92-DAY MEAN

OBSERVED

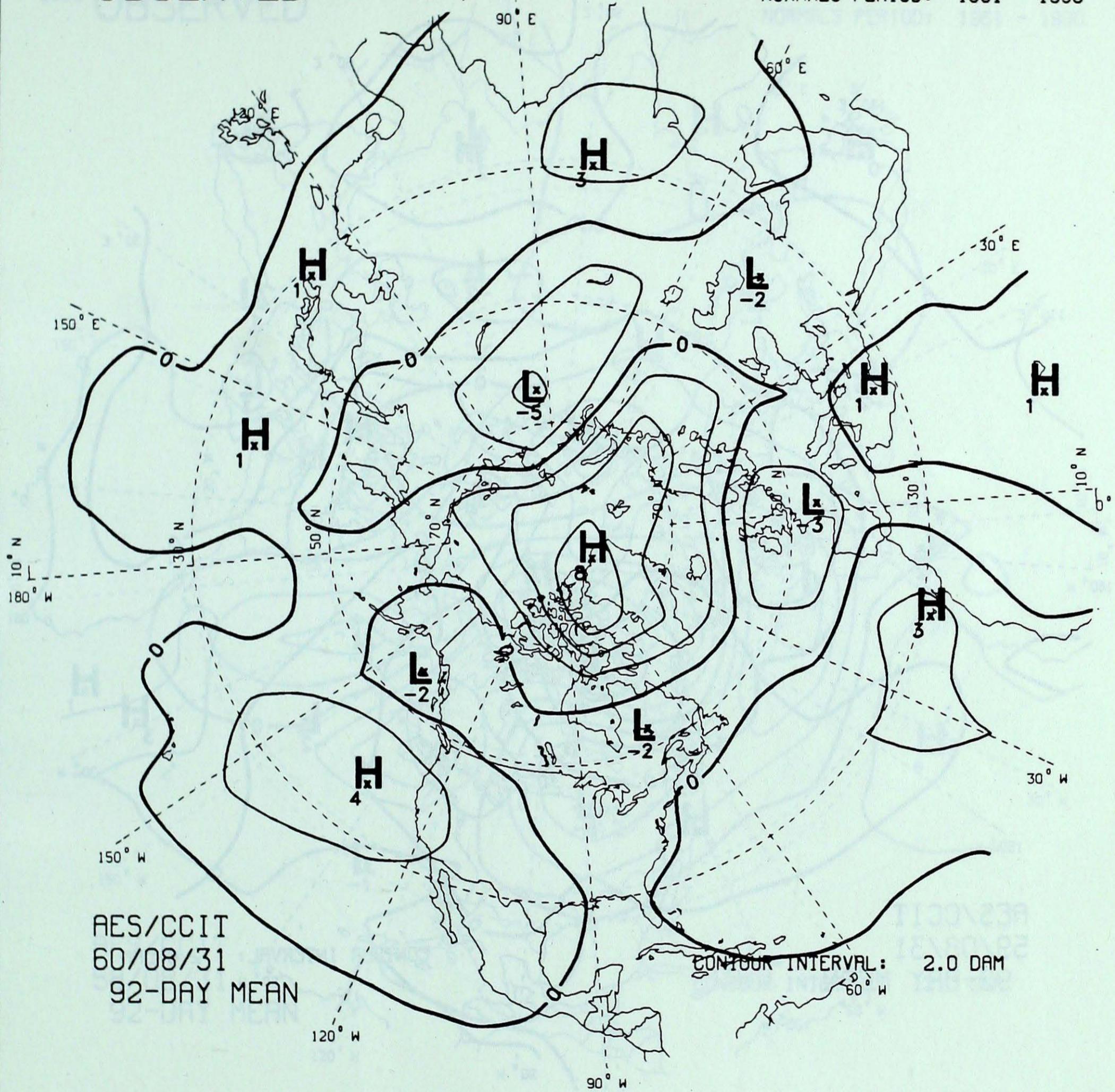
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 60 TO 31 AUG 60
92-DAY MEAN

OBSERVED

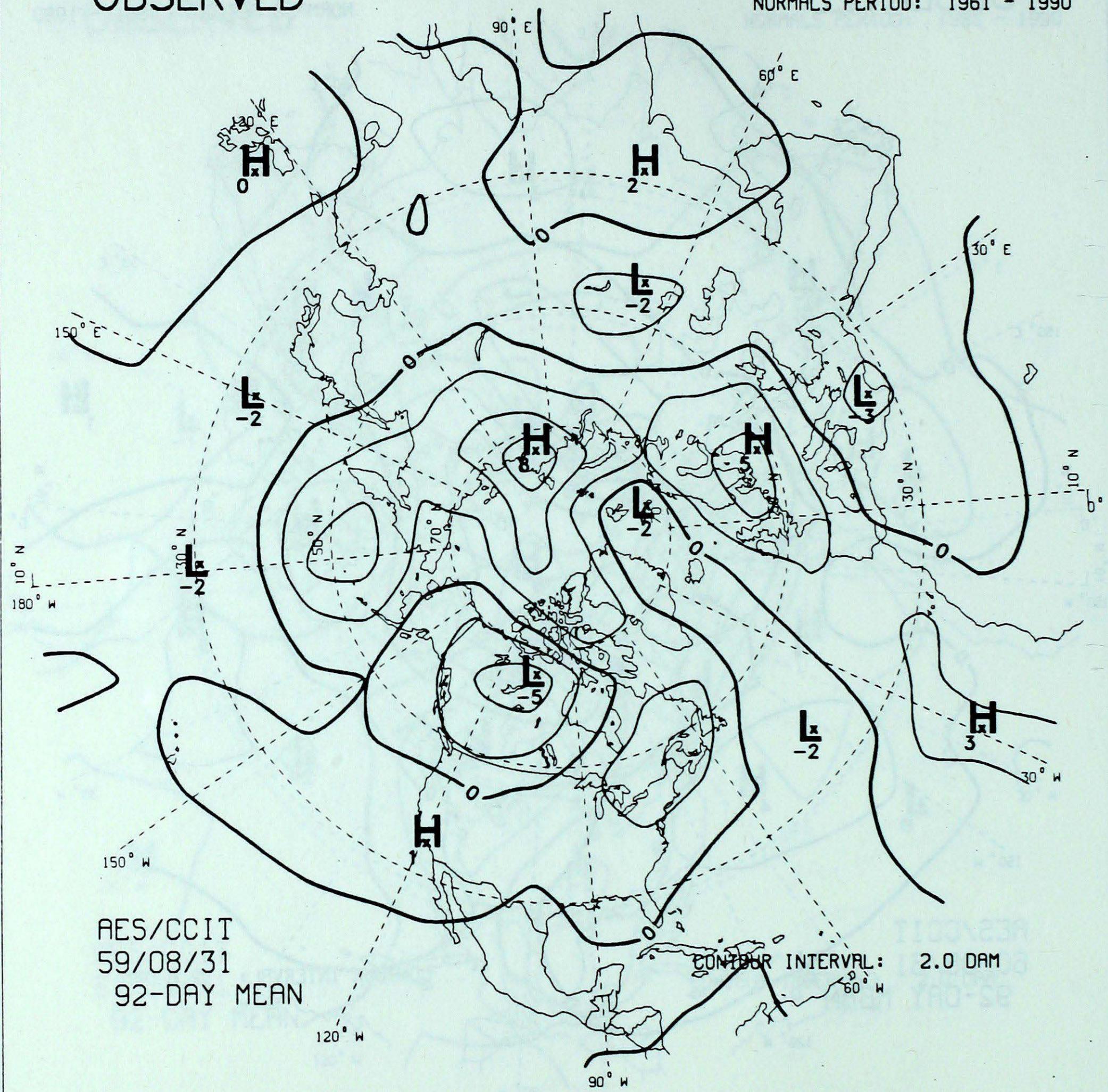
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 59 TO 31 AUG 59
92-DAY MEAN

OBSERVED

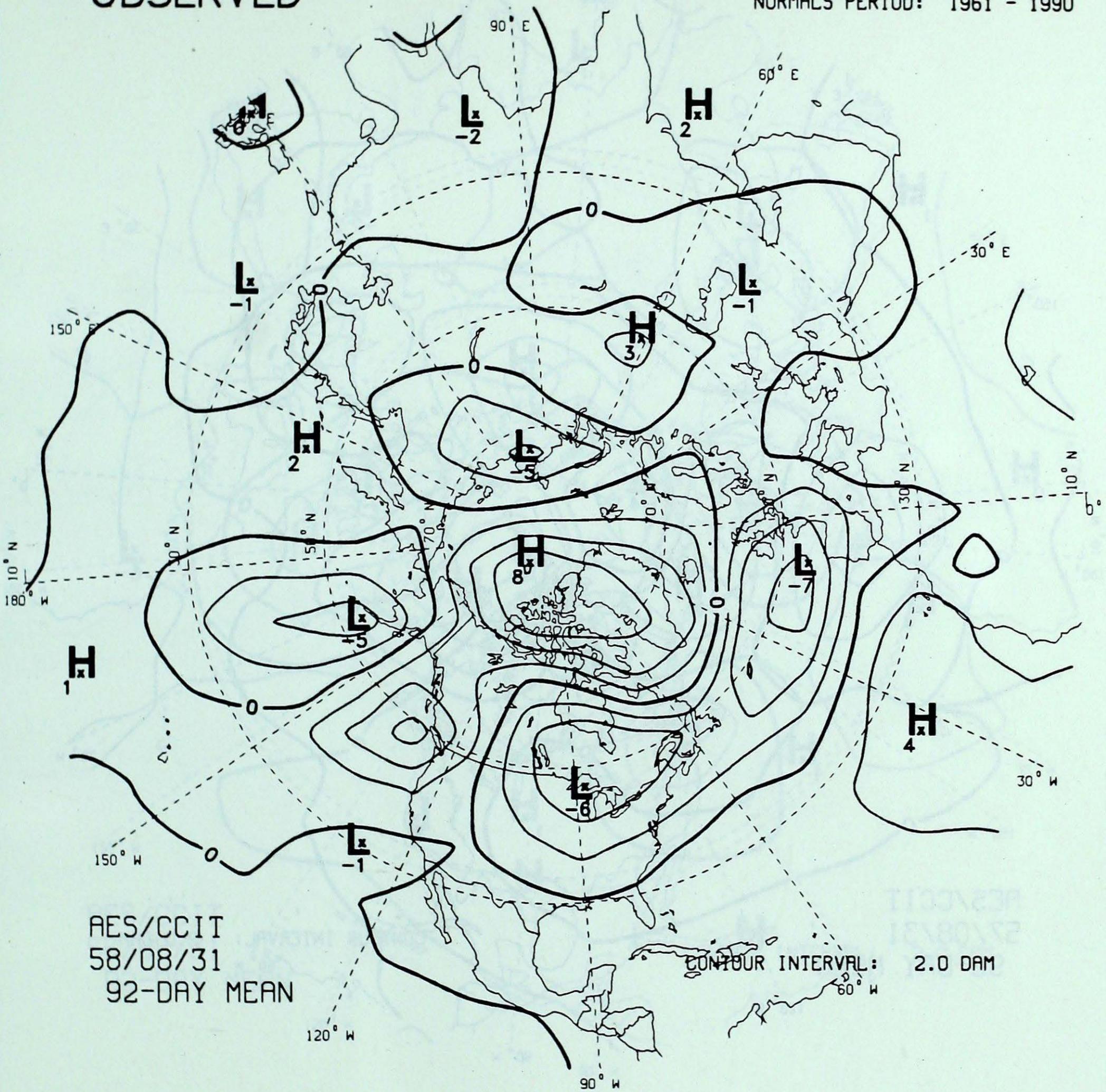
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 58 TO 31 AUG 58
92-DAY MEAN

OBSERVED

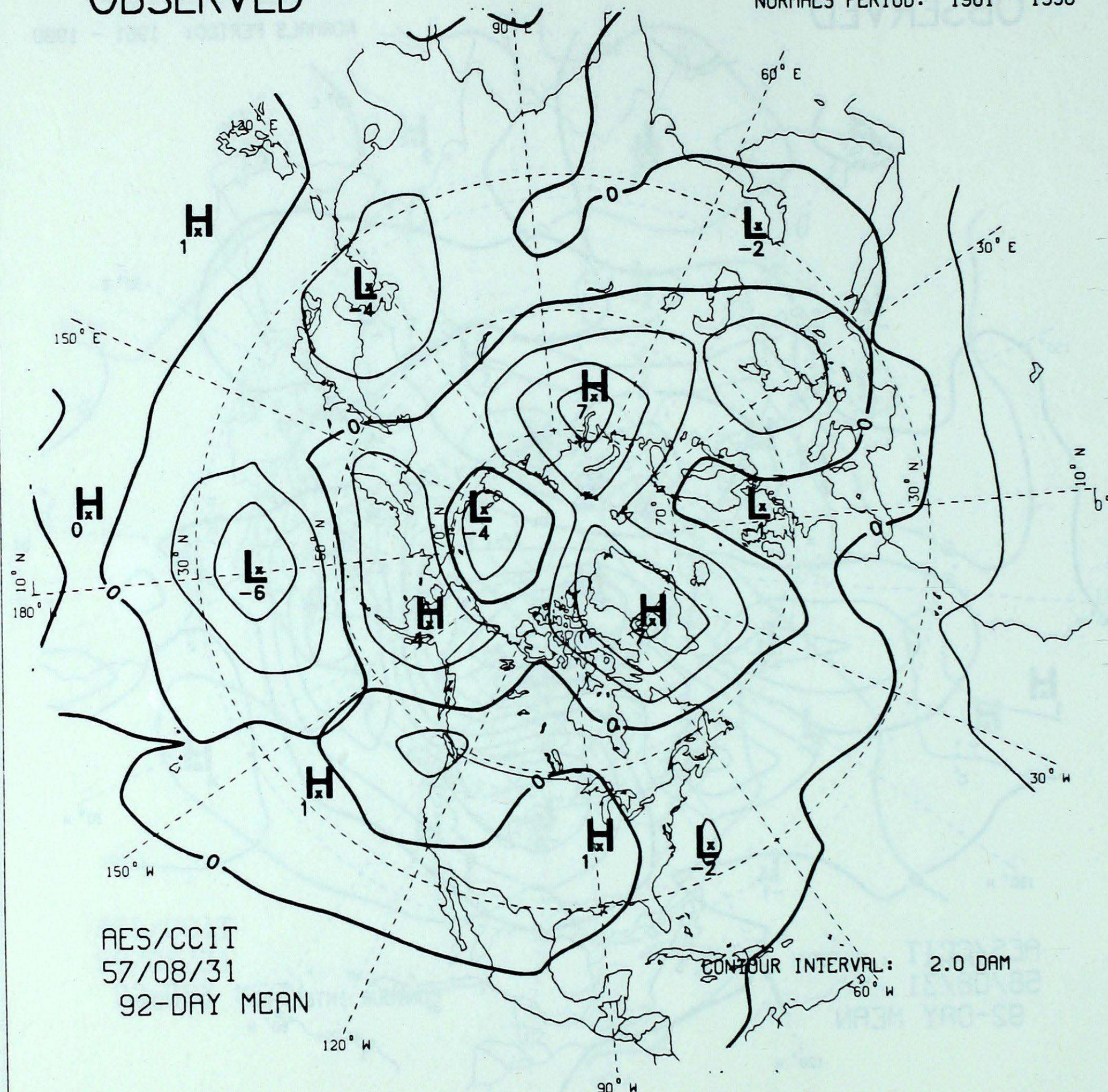
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 57 TO 31 AUG 57
92-DAY MEAN

OBSERVED

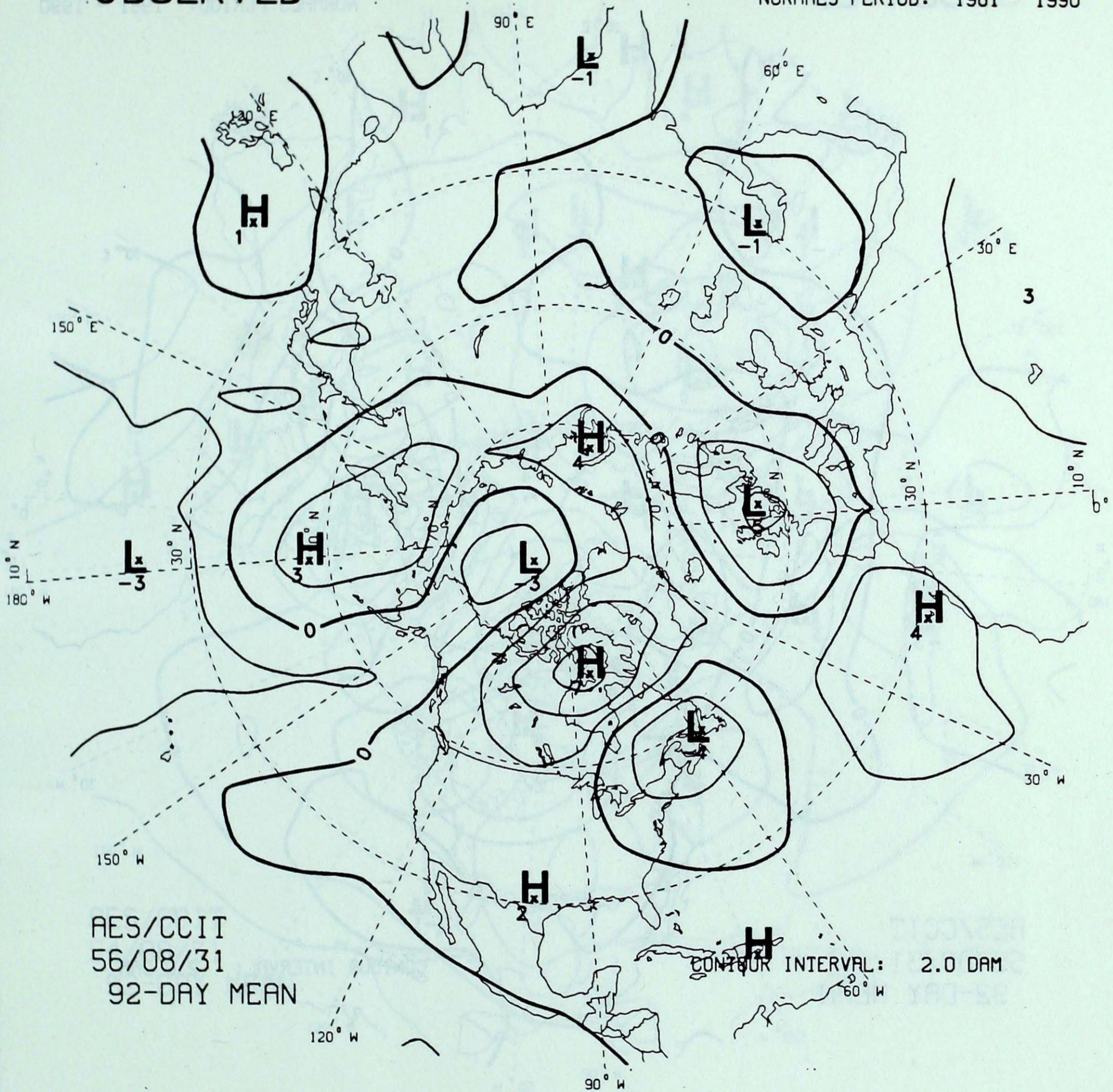
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 56 TO 31 AUG 56
92-DAY MEAN

OBSERVED

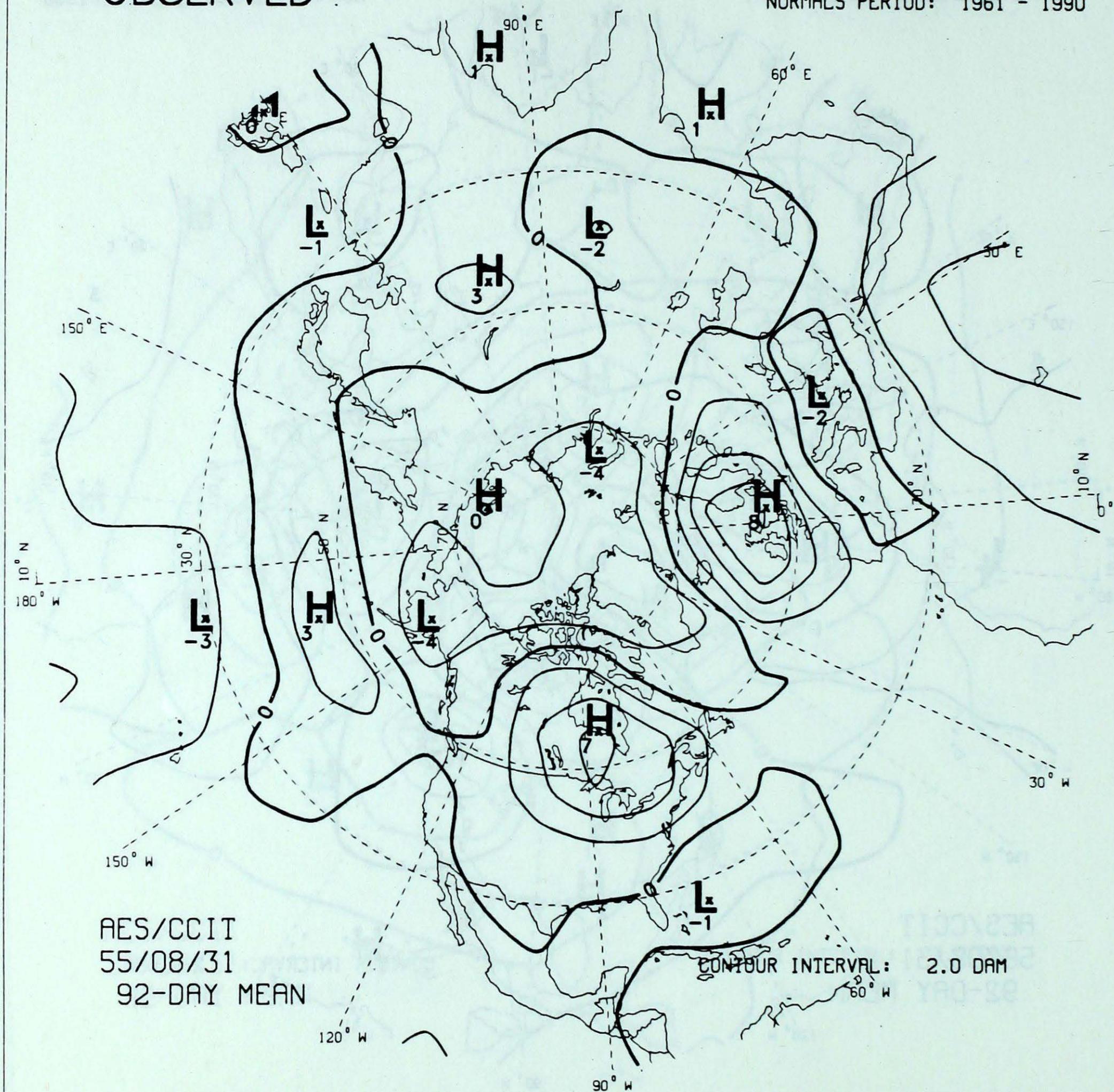
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 55 TO 31 AUG 55
92-DAY MEAN

OBSERVED

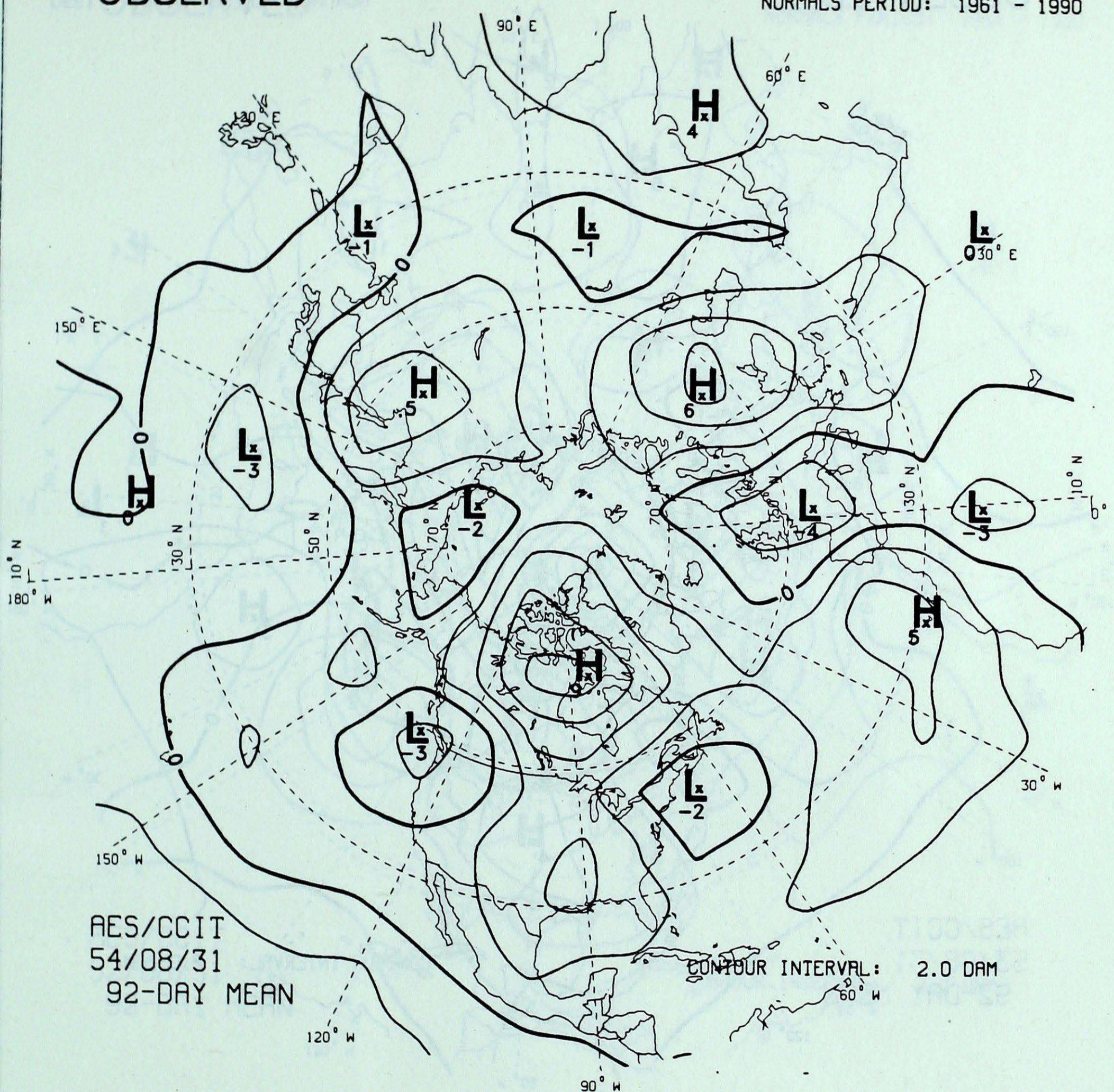
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 54 TO 31 AUG 54
92-DAY MEAN

OBSERVED

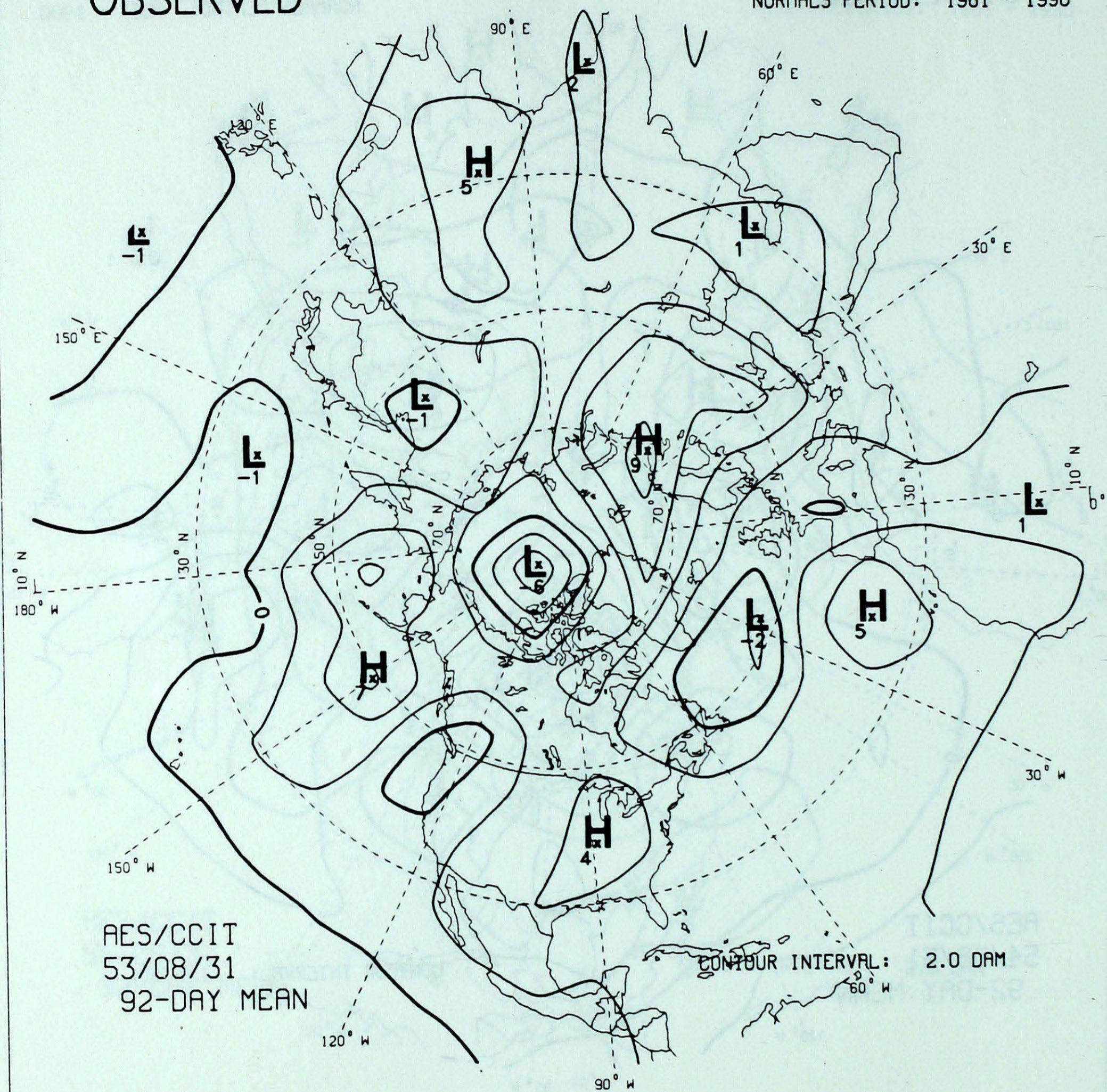
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 53 TO 31 AUG 53
92-DAY MEAN

OBSERVED

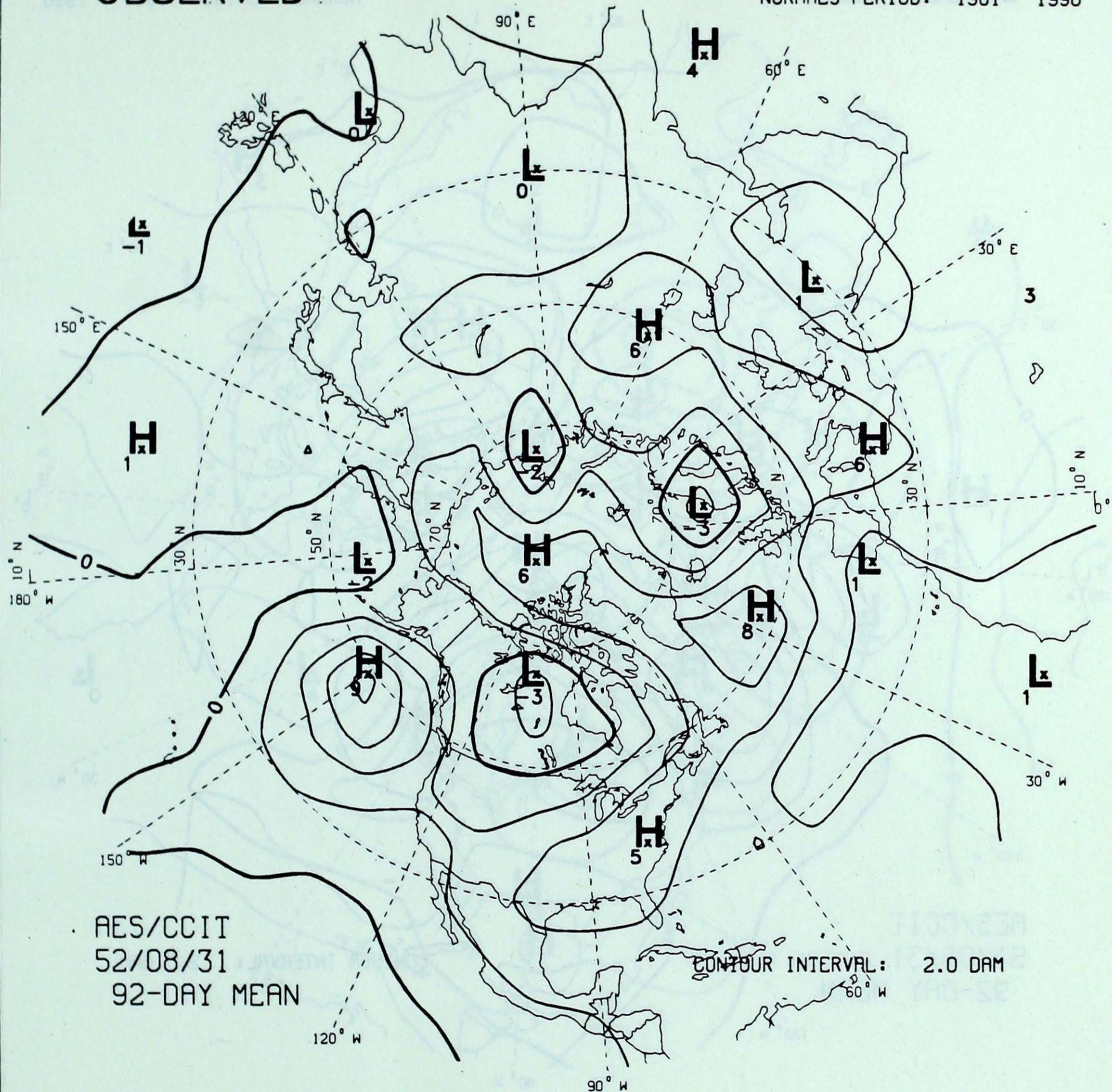
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 52 TO 31 AUG 52
92-DAY MEAN

OBSERVED

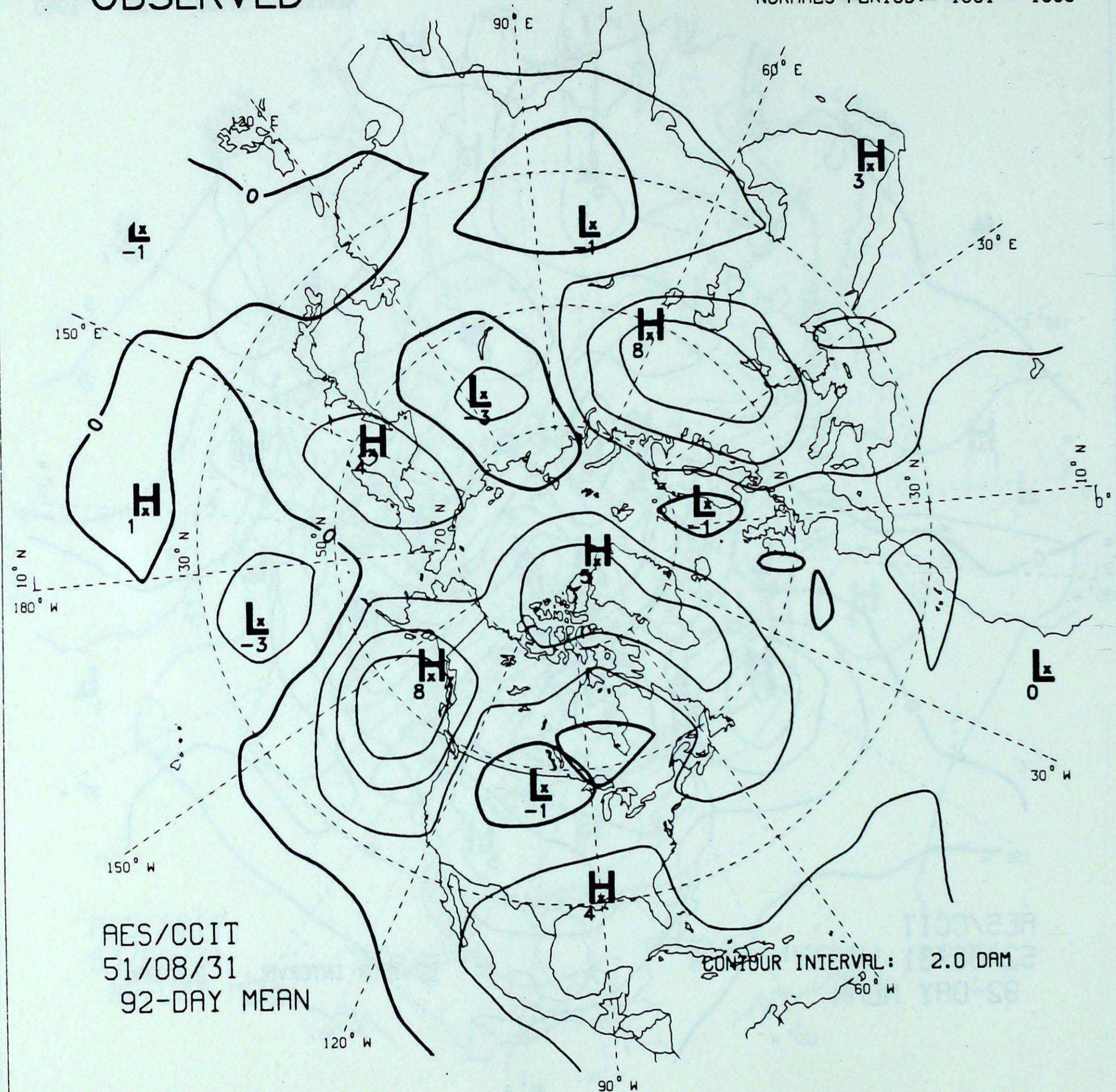
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 51 TO 31 AUG 51
92-DAY MEAN

OBSERVED

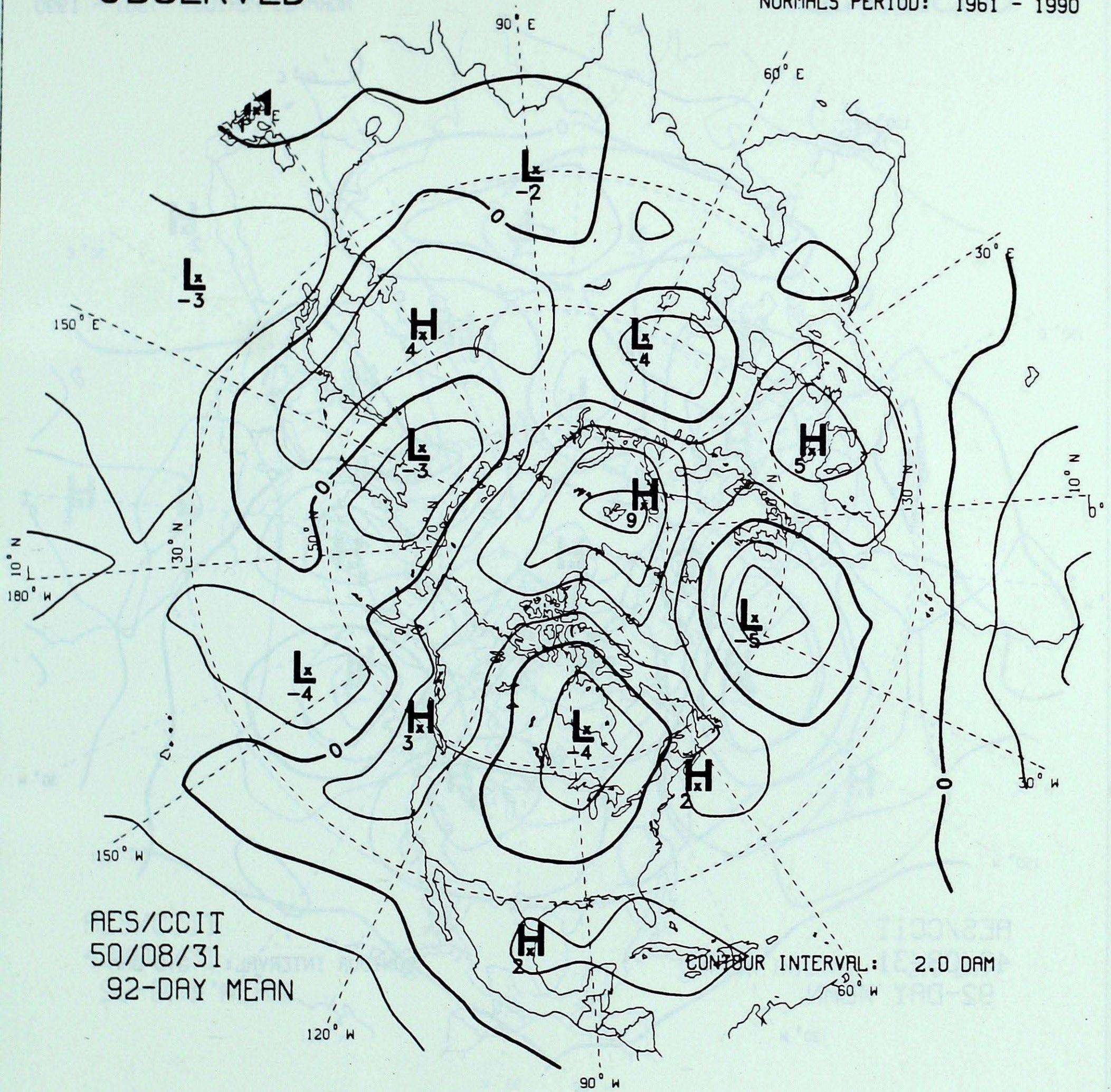
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 50 TO 31 AUG 50
92-DAY MEAN

OBSERVED

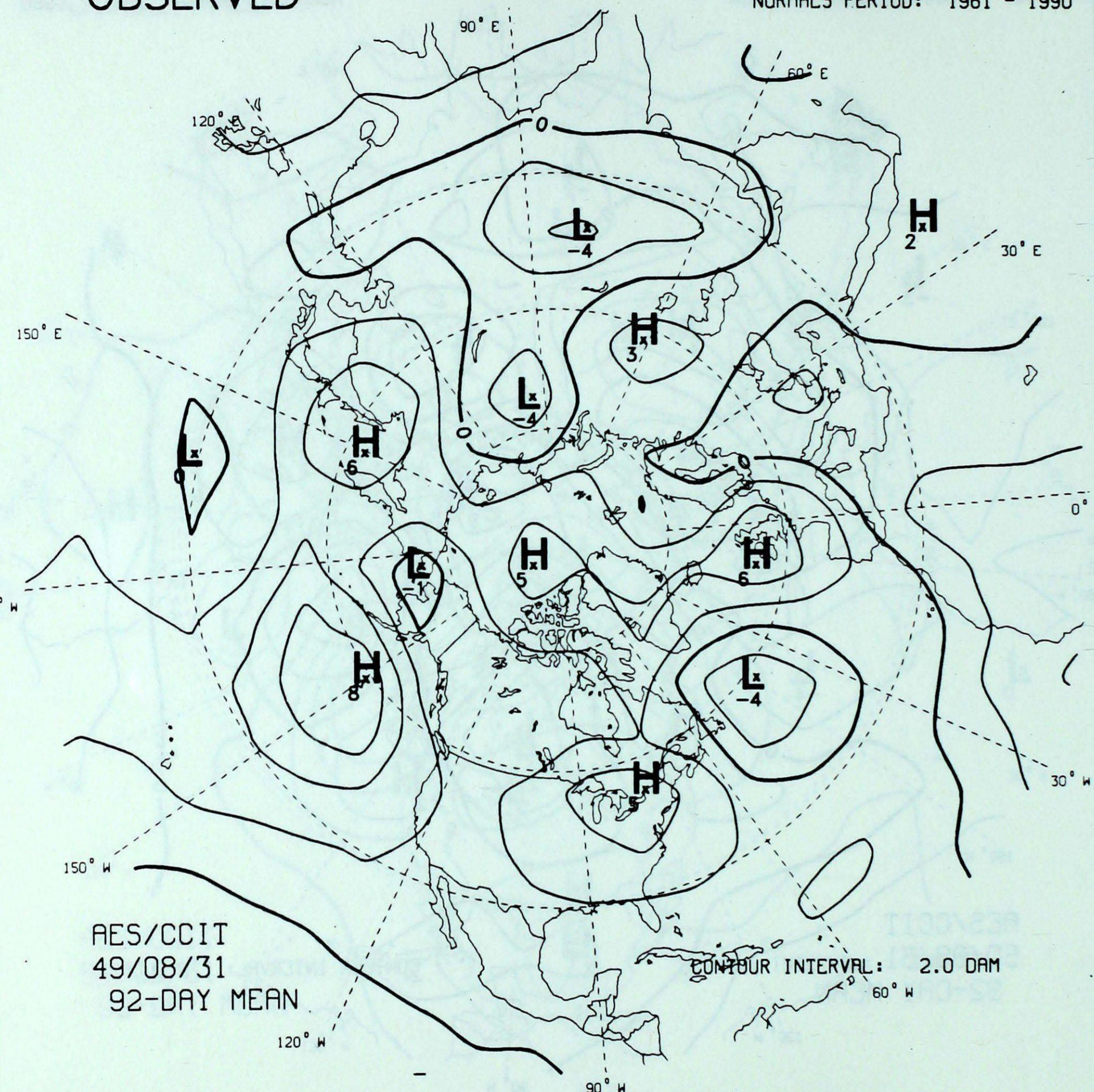
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 49 TO 31 AUG 49
92-DAY MEAN

OBSERVED

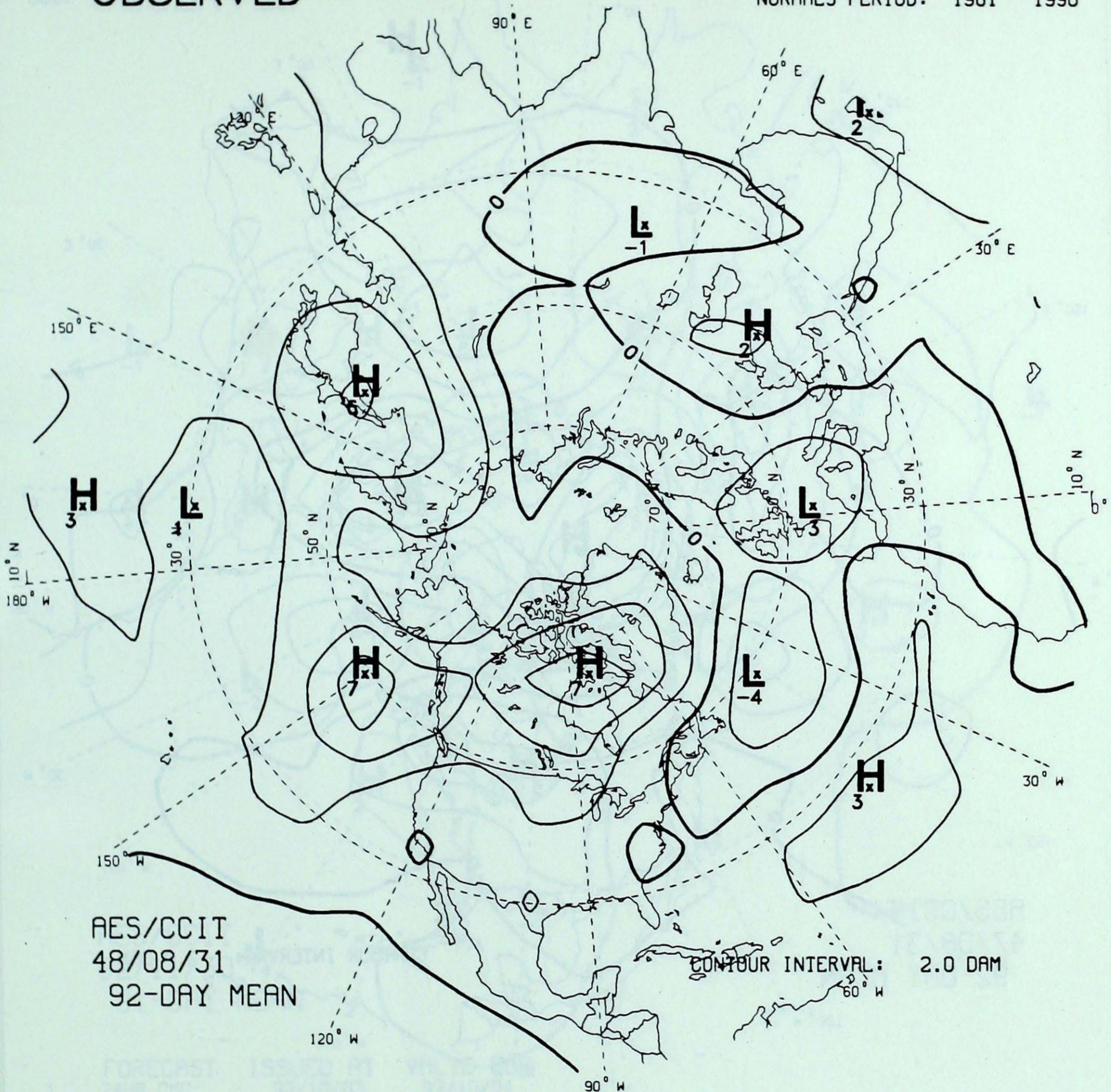
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 48 TO 31 AUG 48
92-DAY MEAN

OBSERVED

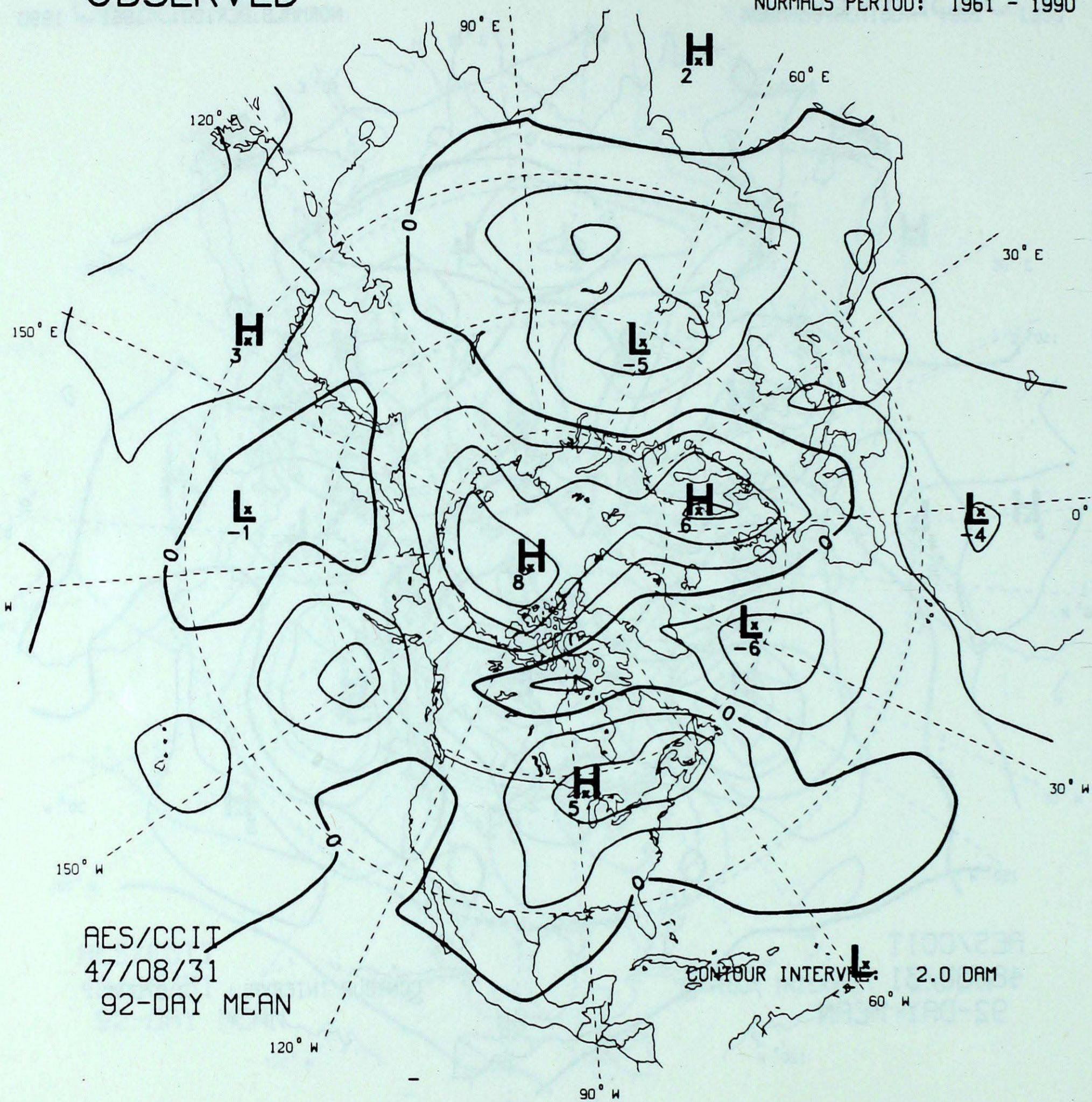
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 JUN 47 TO 31 AUG 47
92-DAY MEAN

OBSERVED

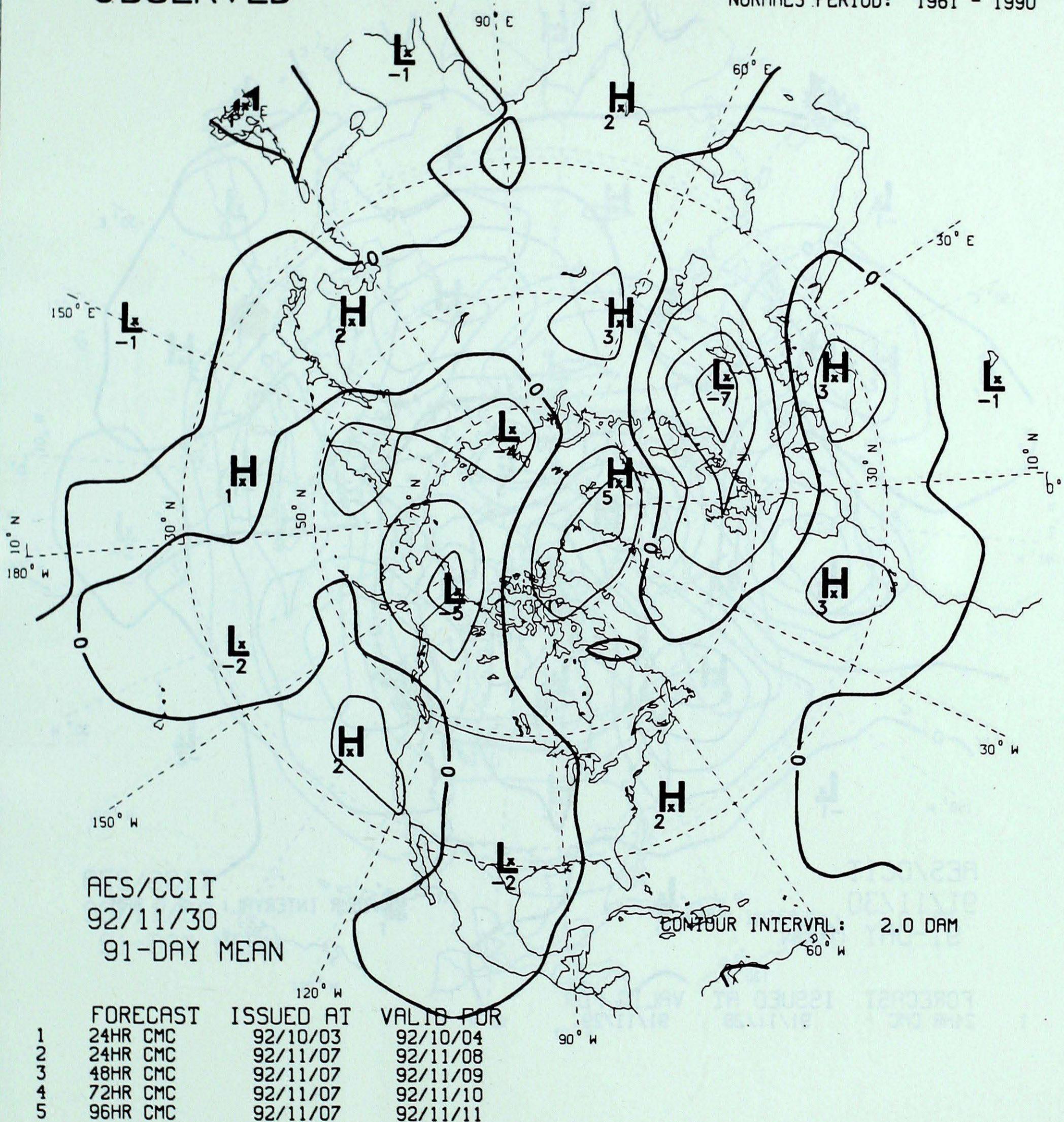
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 92 TO 30 NOV 92
91-DAY MEAN

OBSERVED

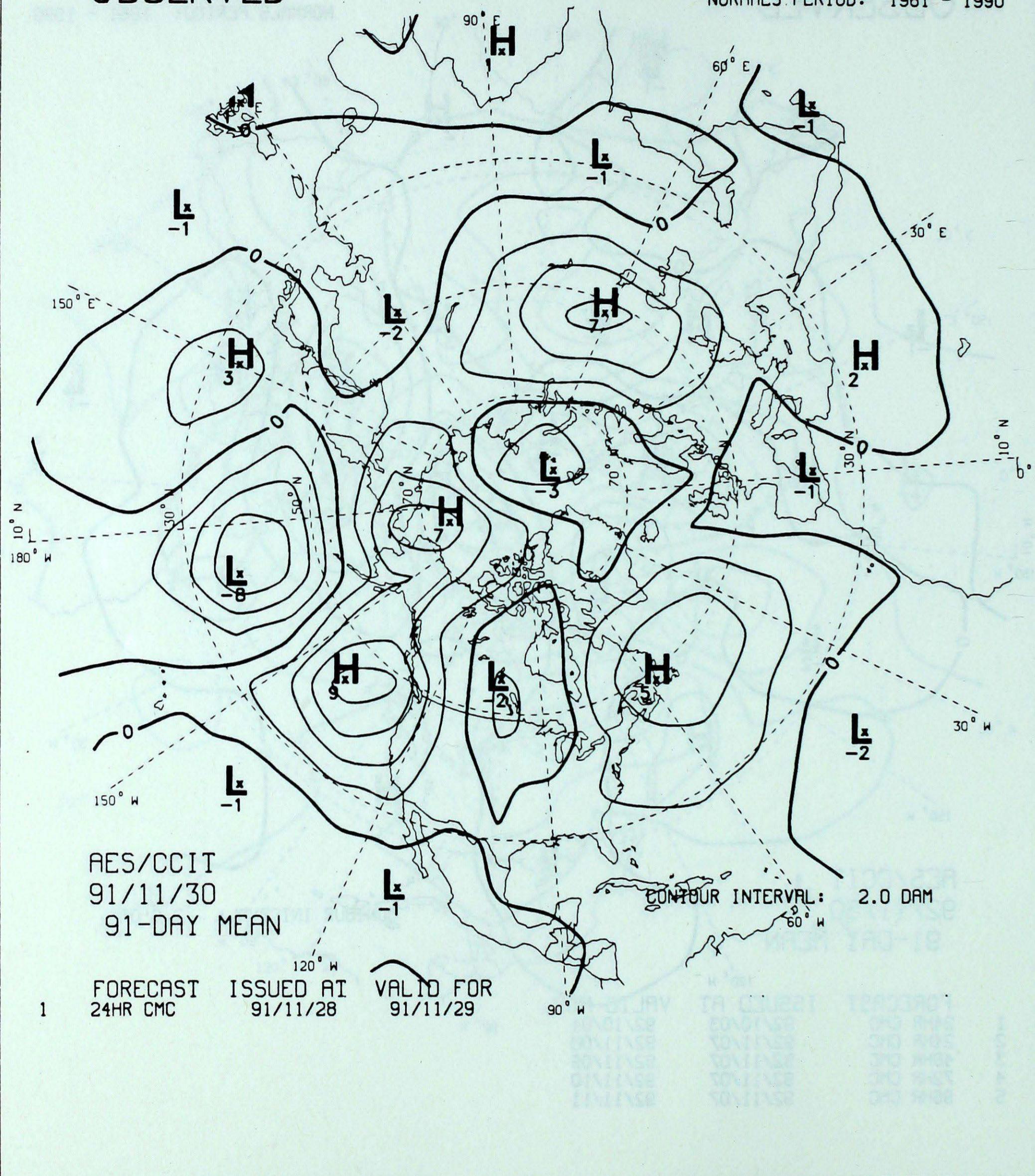
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 91 TO 30 NOV 91
91-DAY MEAN

OBSERVED

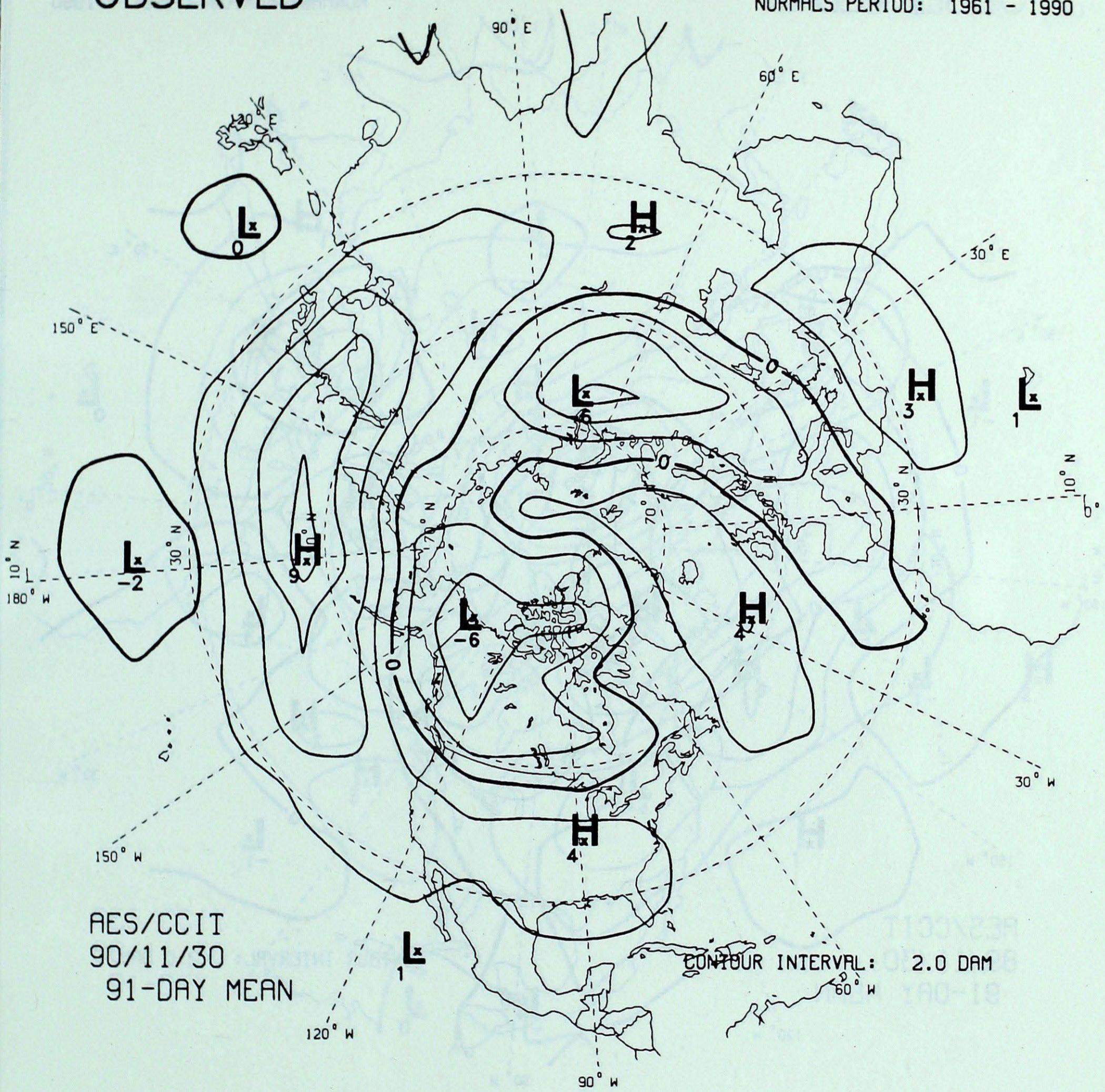
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 90 TO 30 NOV 90
91-DAY MEAN

OBSERVED

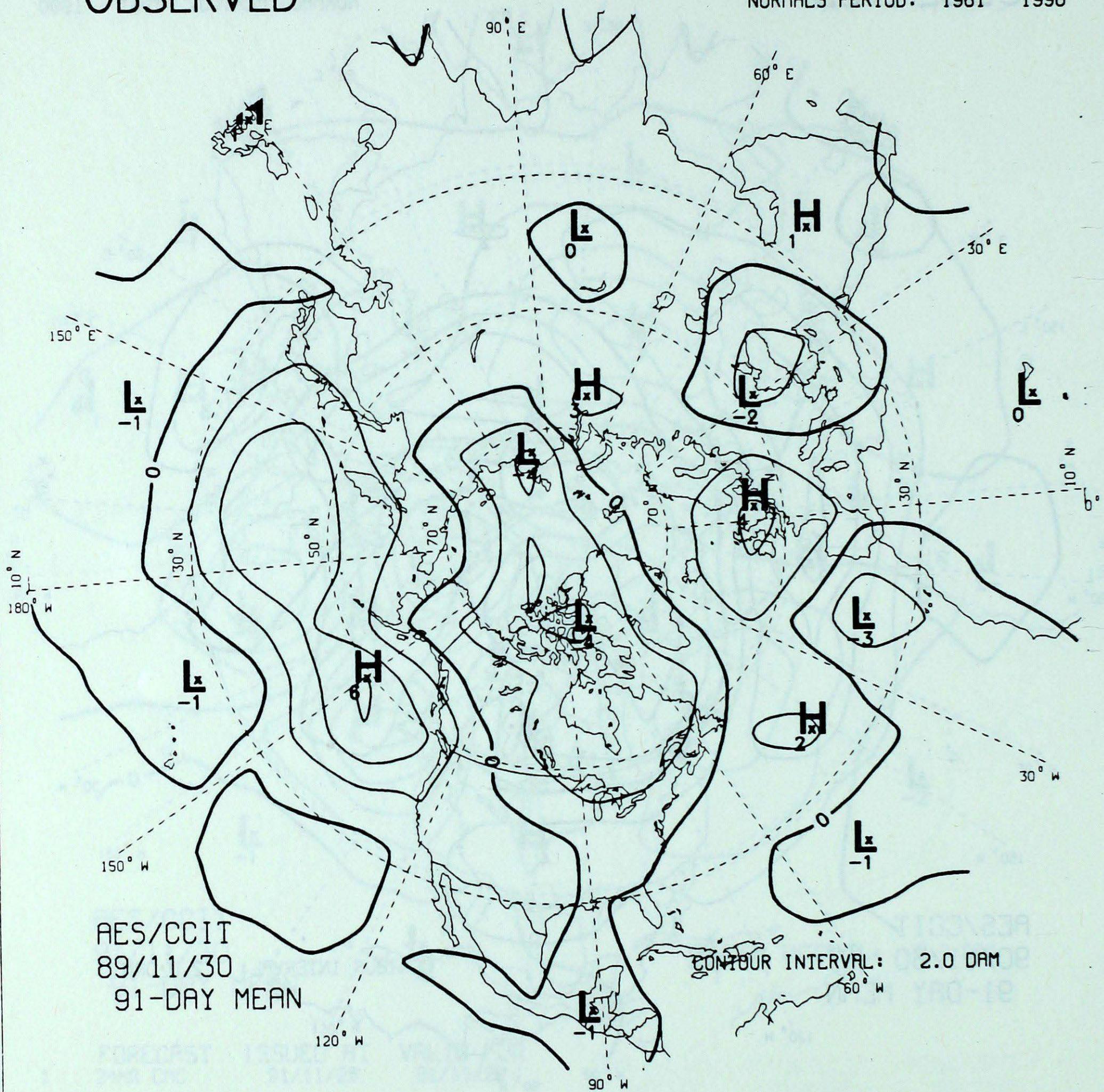
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 89 TO 30 NOV 89
91-DAY MEAN

OBSERVED

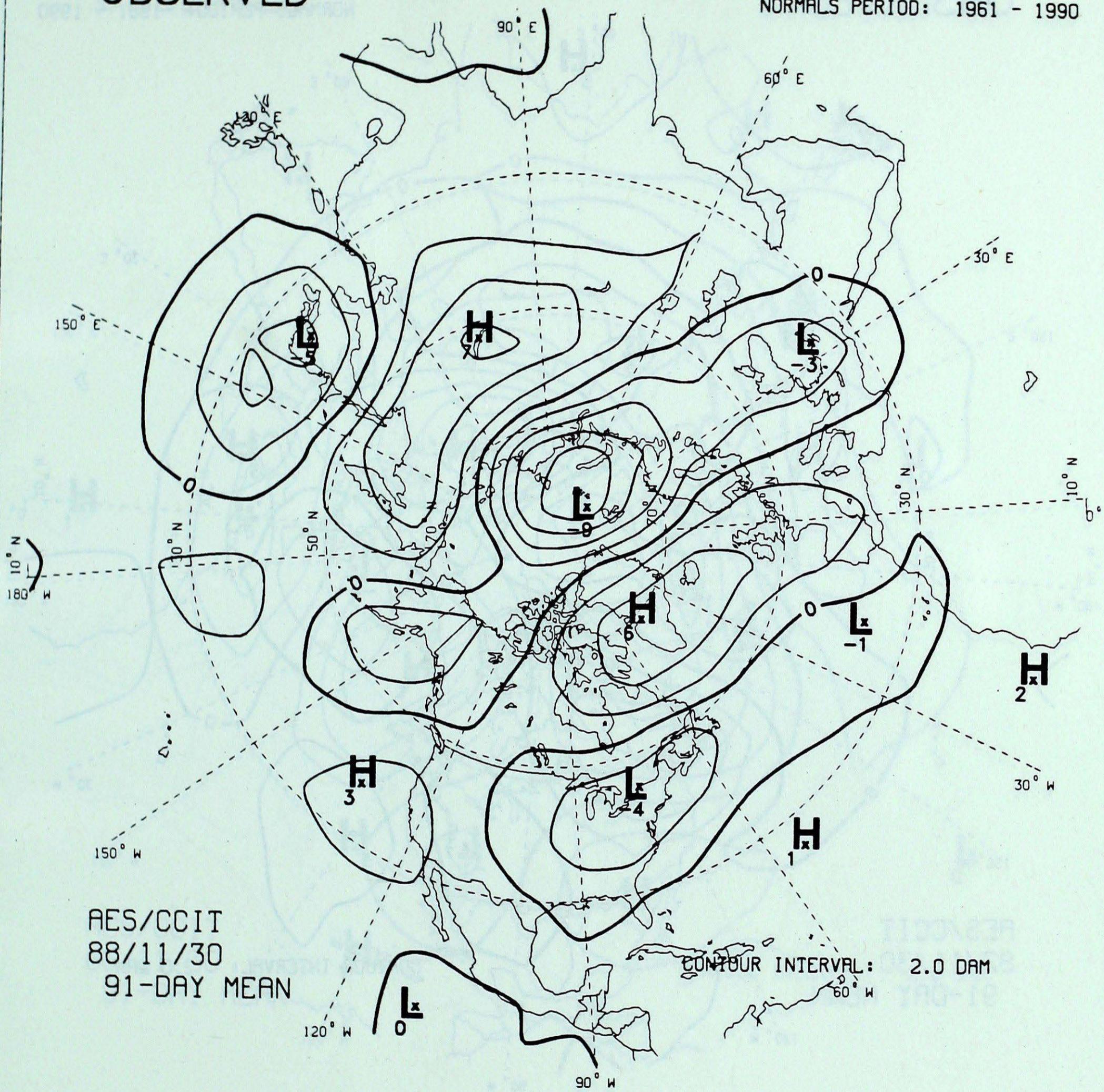
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 88 TO 30 NOV 88
91-DAY MEAN

OBSERVED

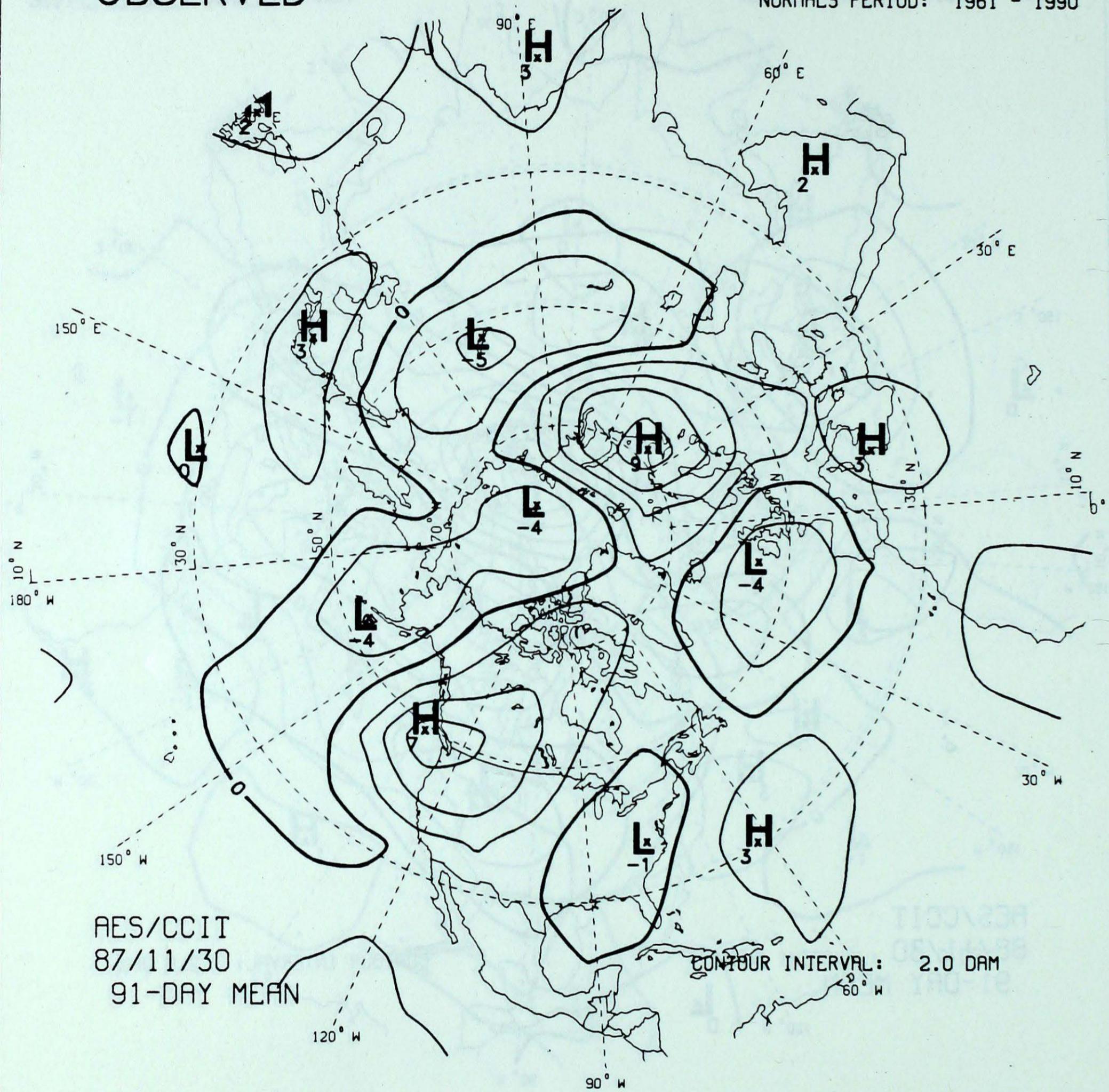
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 87 TO 30 NOV 87
91-DAY MEAN

OBSERVED

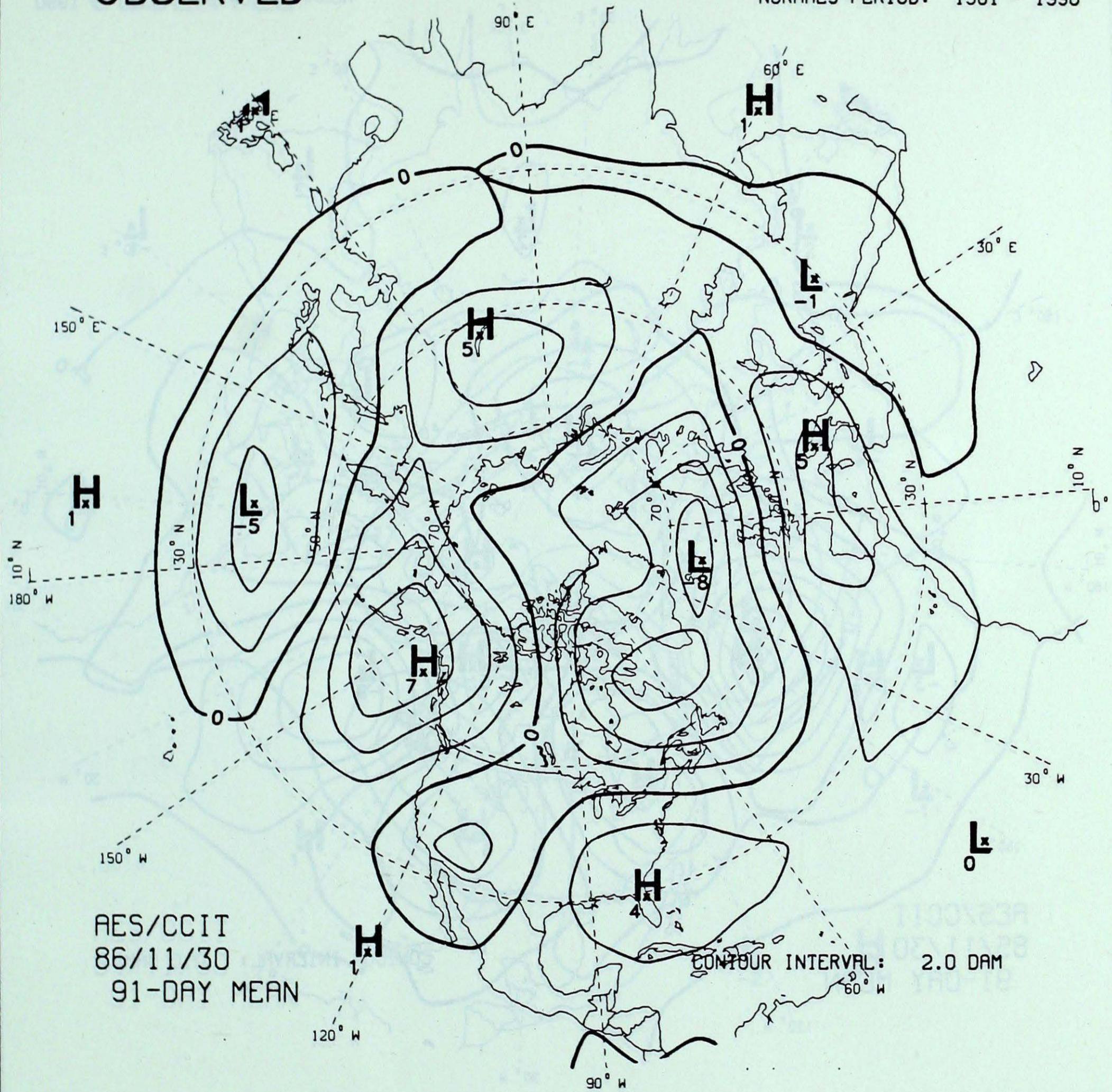
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 86 TO 30 NOV 86
91-DAY MEAN

OBSERVED

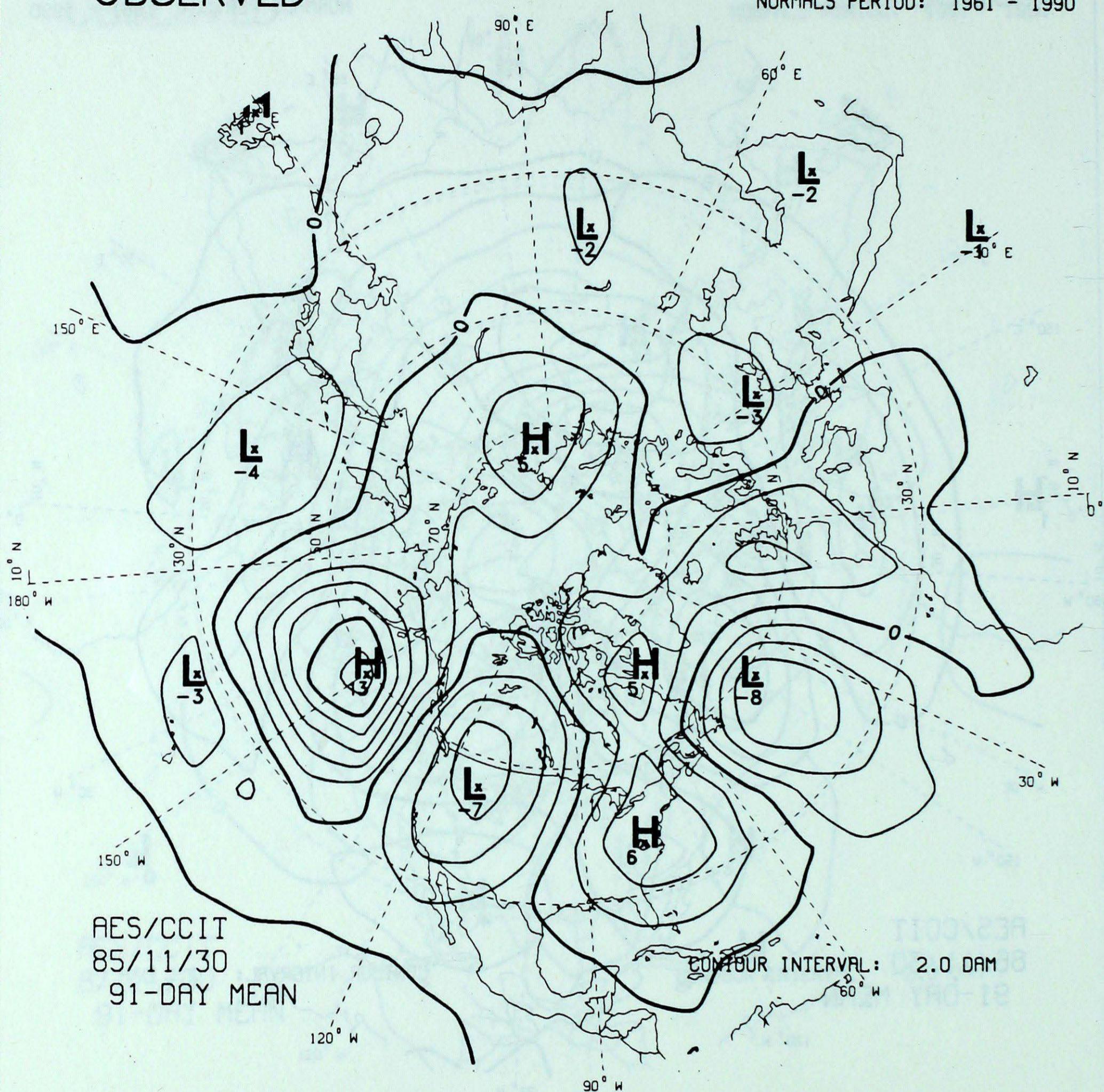
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 85 TO 30 NOV 85
91-DAY MEAN

OBSERVED

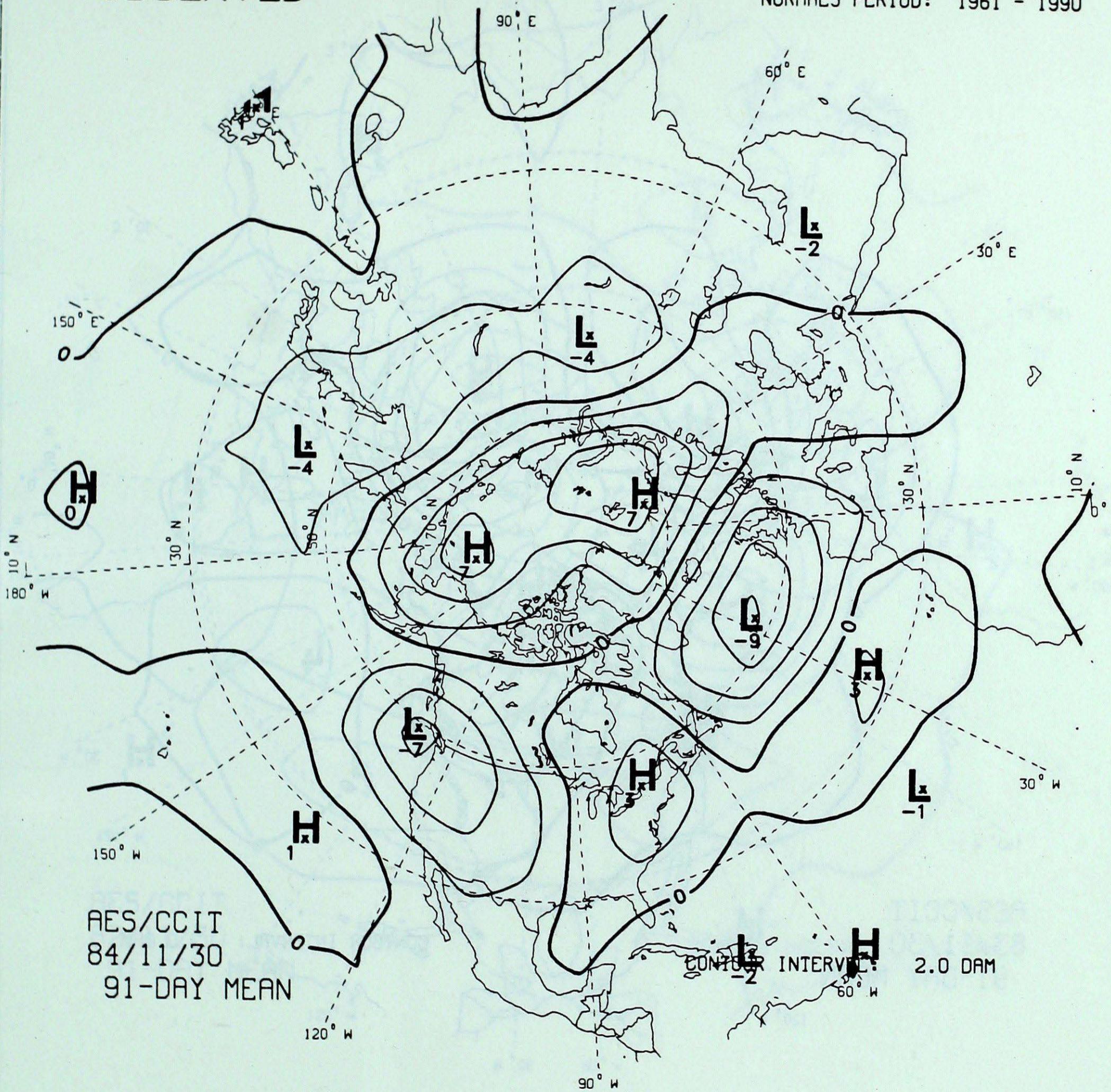
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 84 TO 30 NOV 84
91-DAY MEAN

OBSERVED

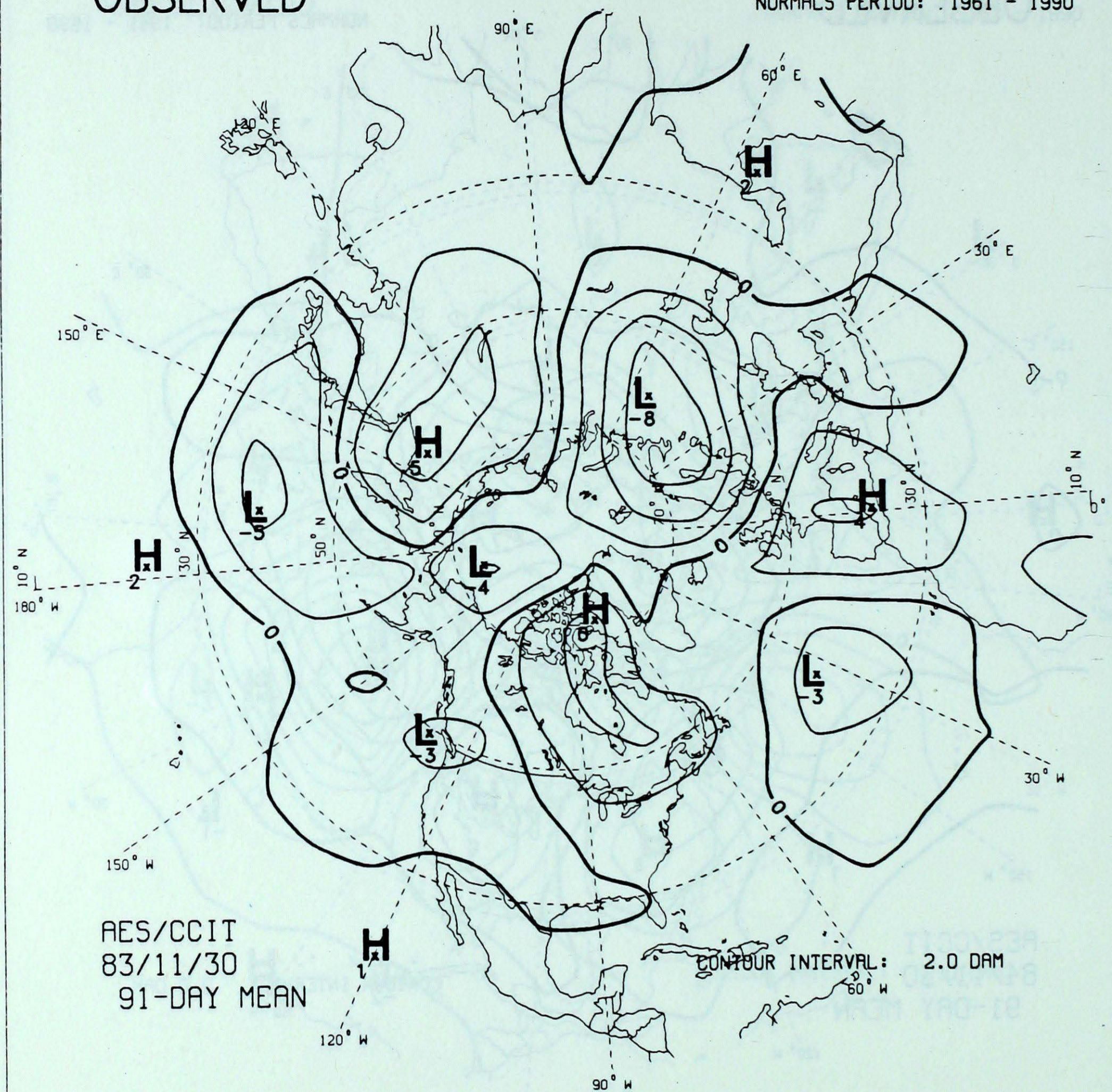
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 83 TO 30 NOV 83
91-DAY MEAN

OBSERVED

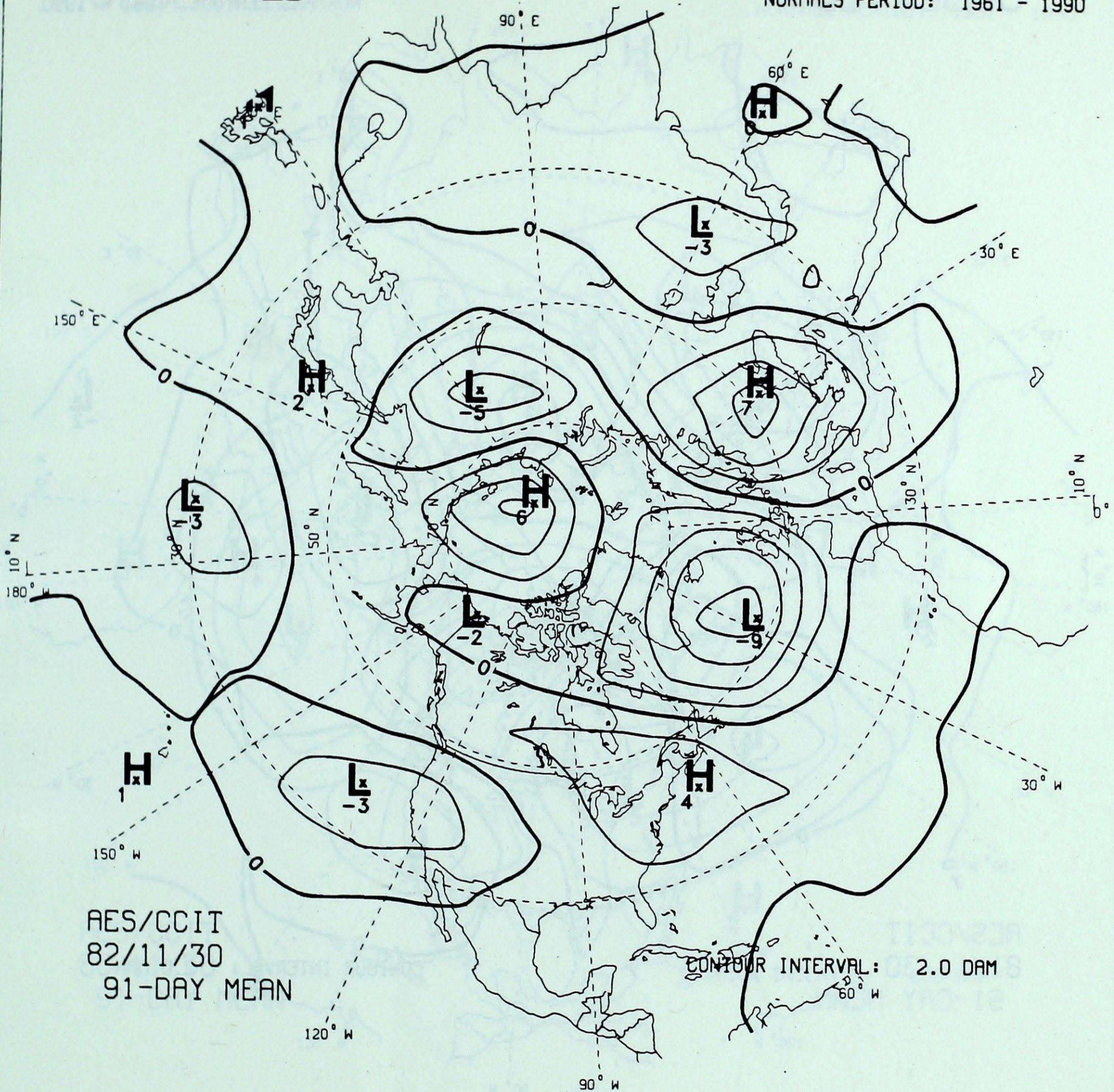
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 82 TO 30 NOV 82
91-DAY MEAN

OBSERVED

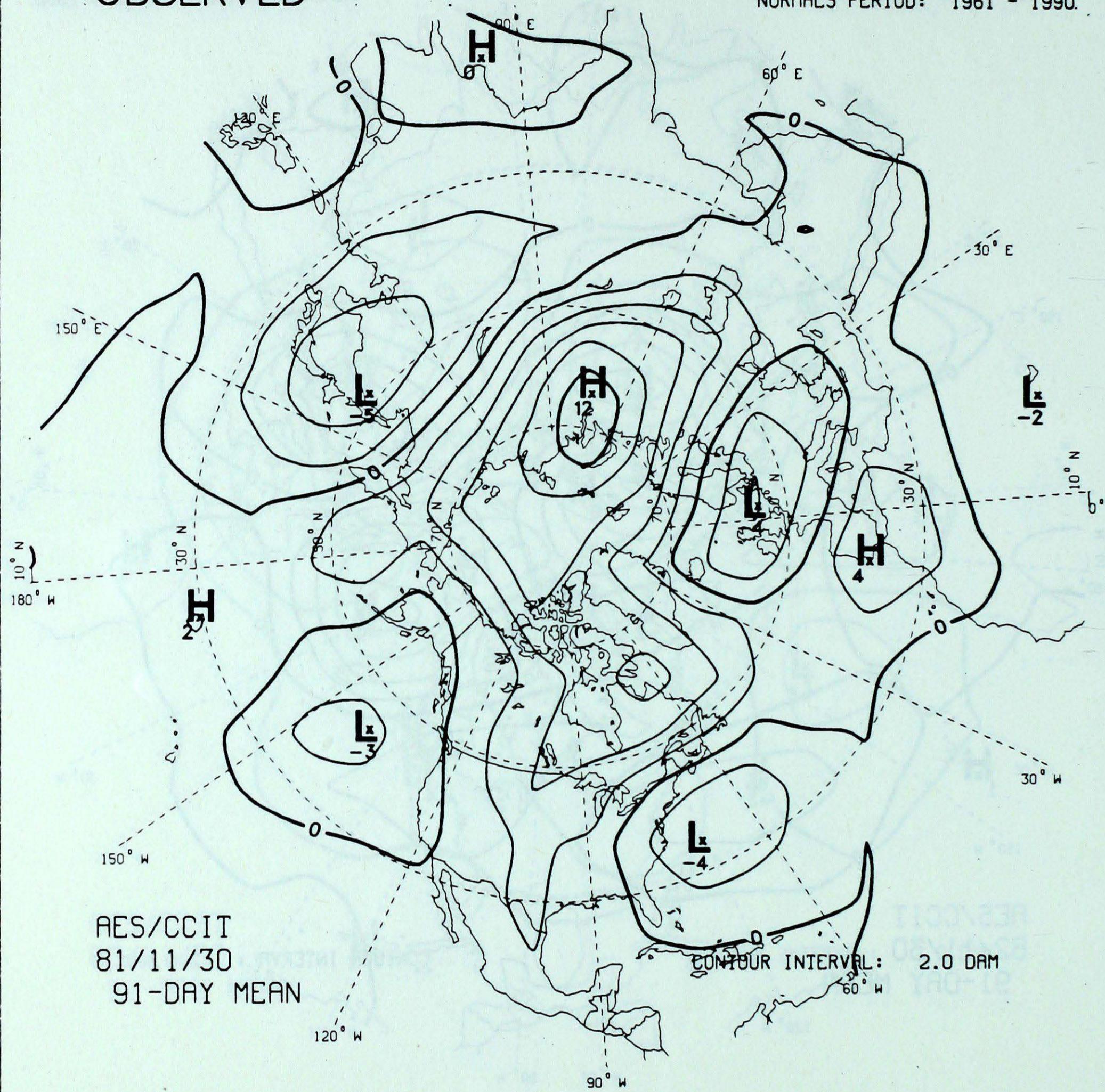
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 81 TO 30 NOV 81
91-DAY MEAN

OBSERVED

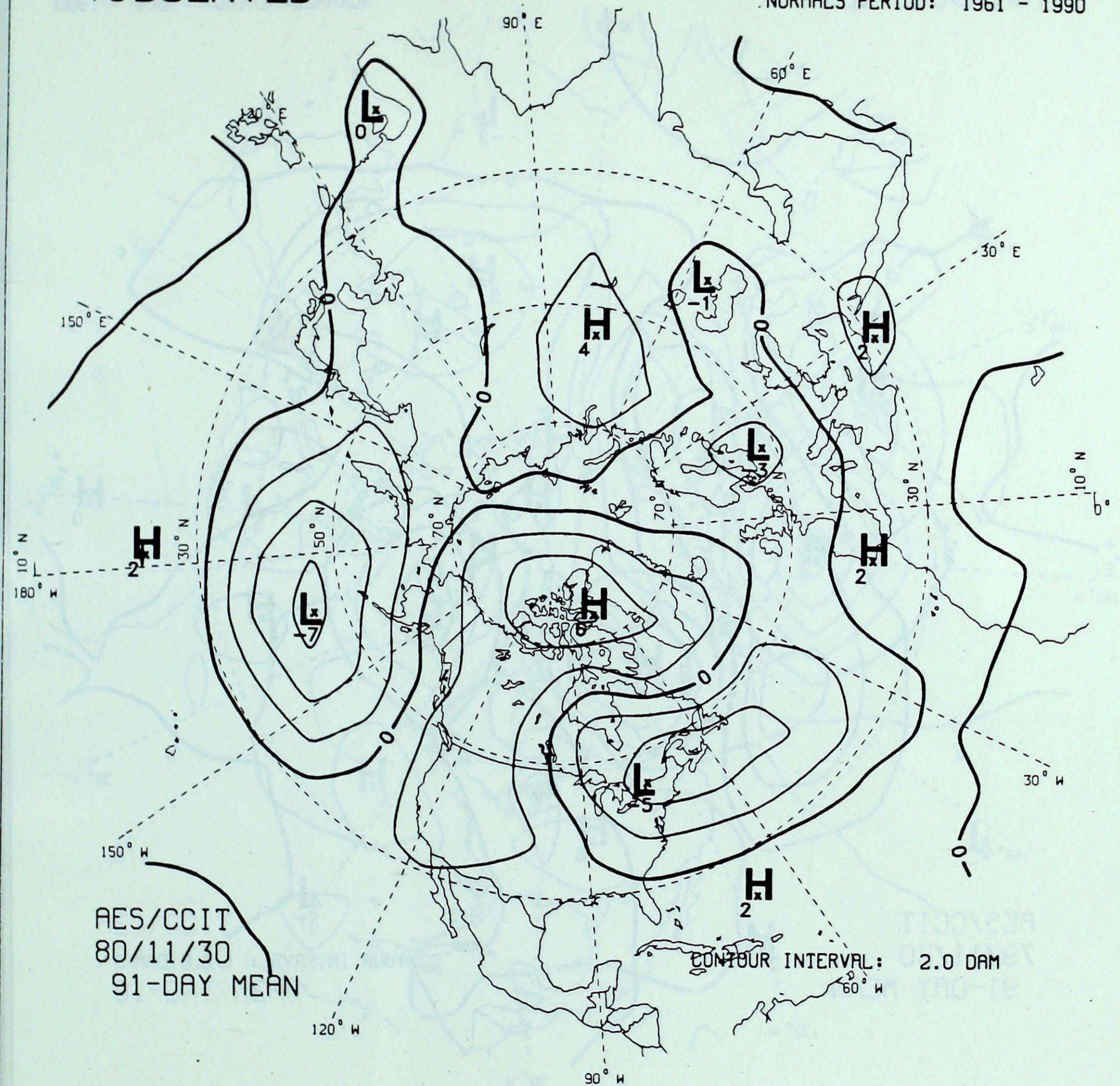
NORMALS PERIOD: 1961 - 1990.



50 KPA HEIGHT ANOMALY
01 SEP 80 TO 30 NOV 80
91-DAY MEAN

OBSERVED

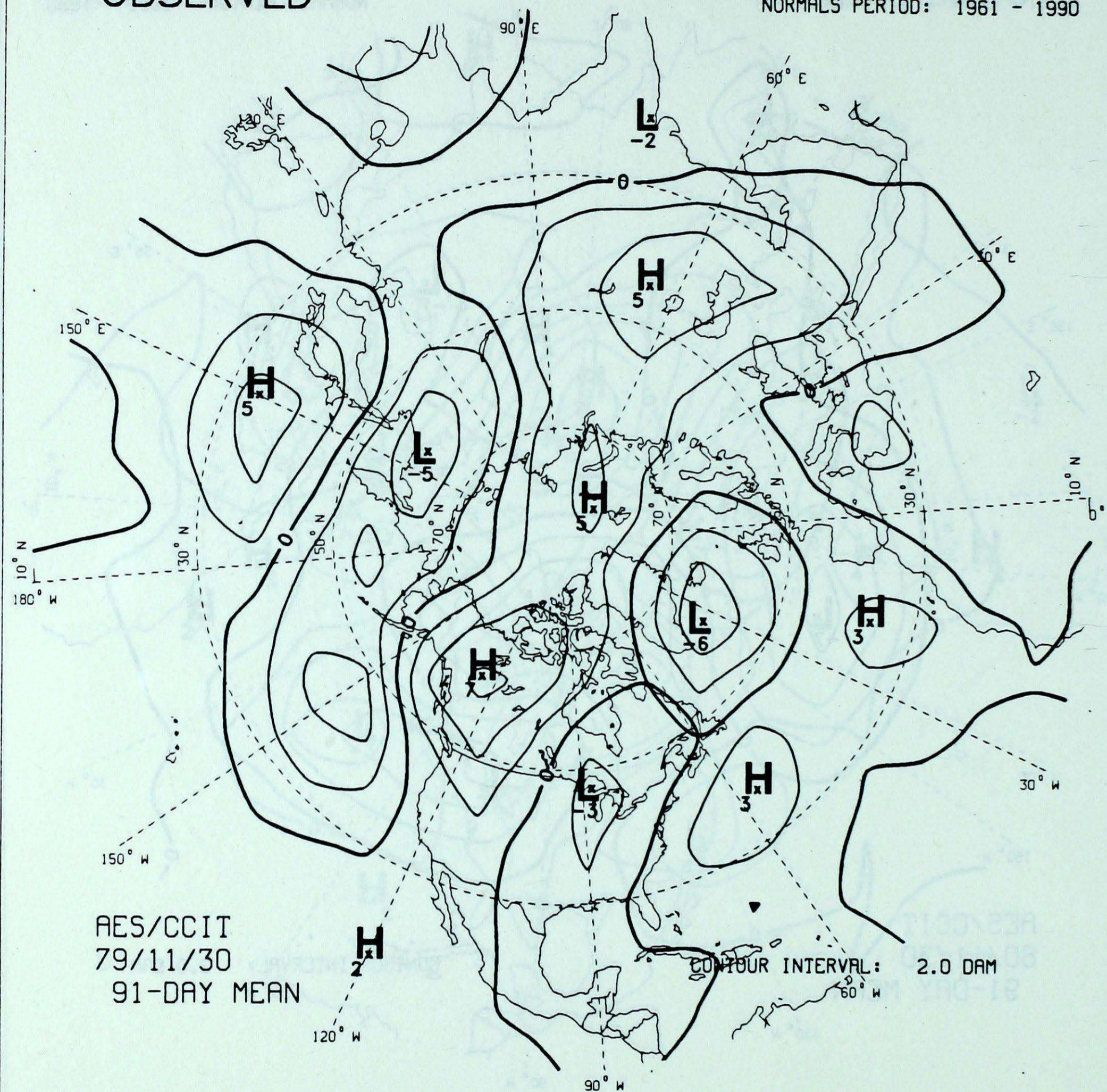
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 79 TO 30 NOV 79
91-DAY MEAN

OBSERVED

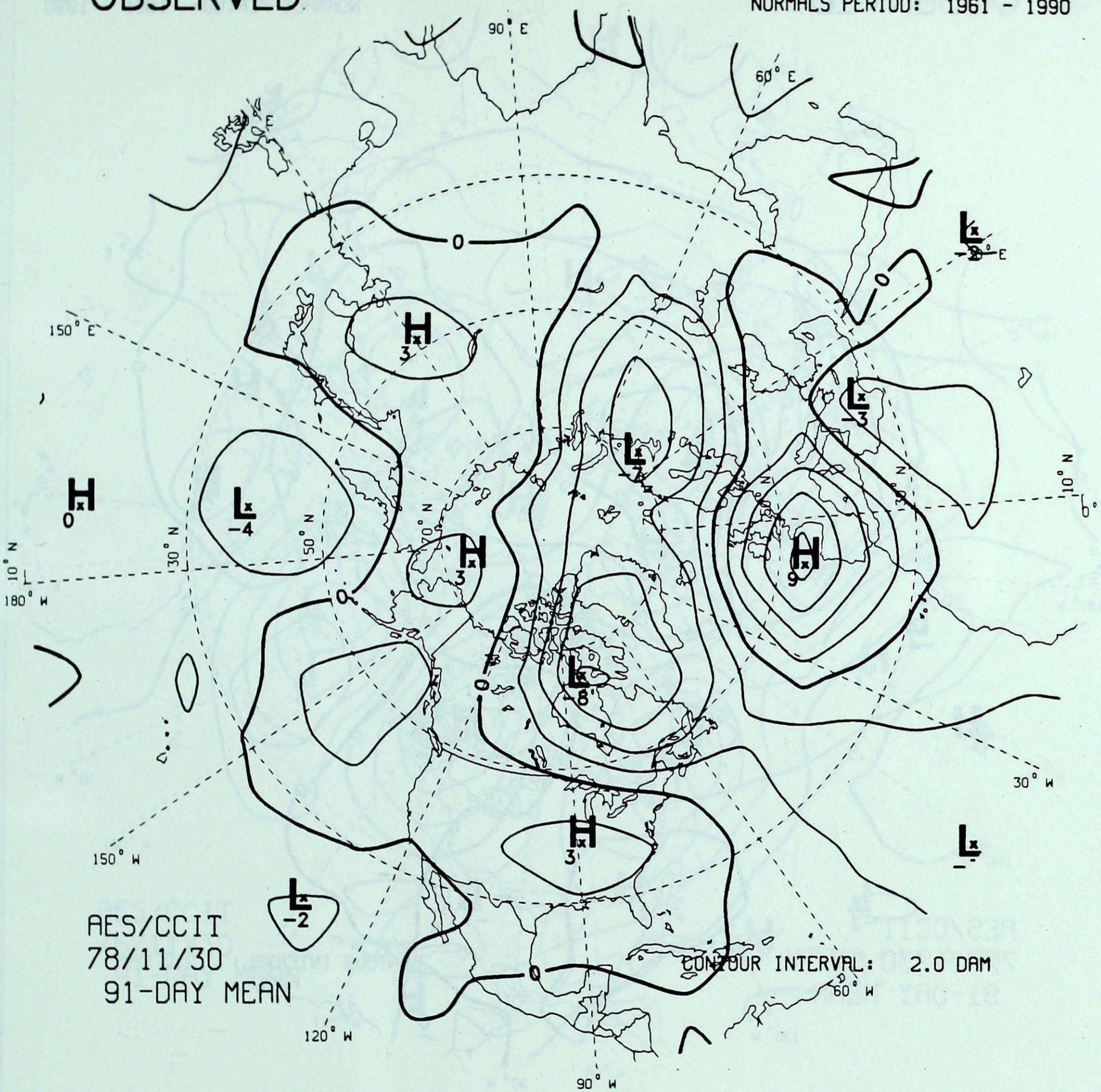
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 78 TO 30 NOV 78
91-DAY MEAN

OBSERVED.

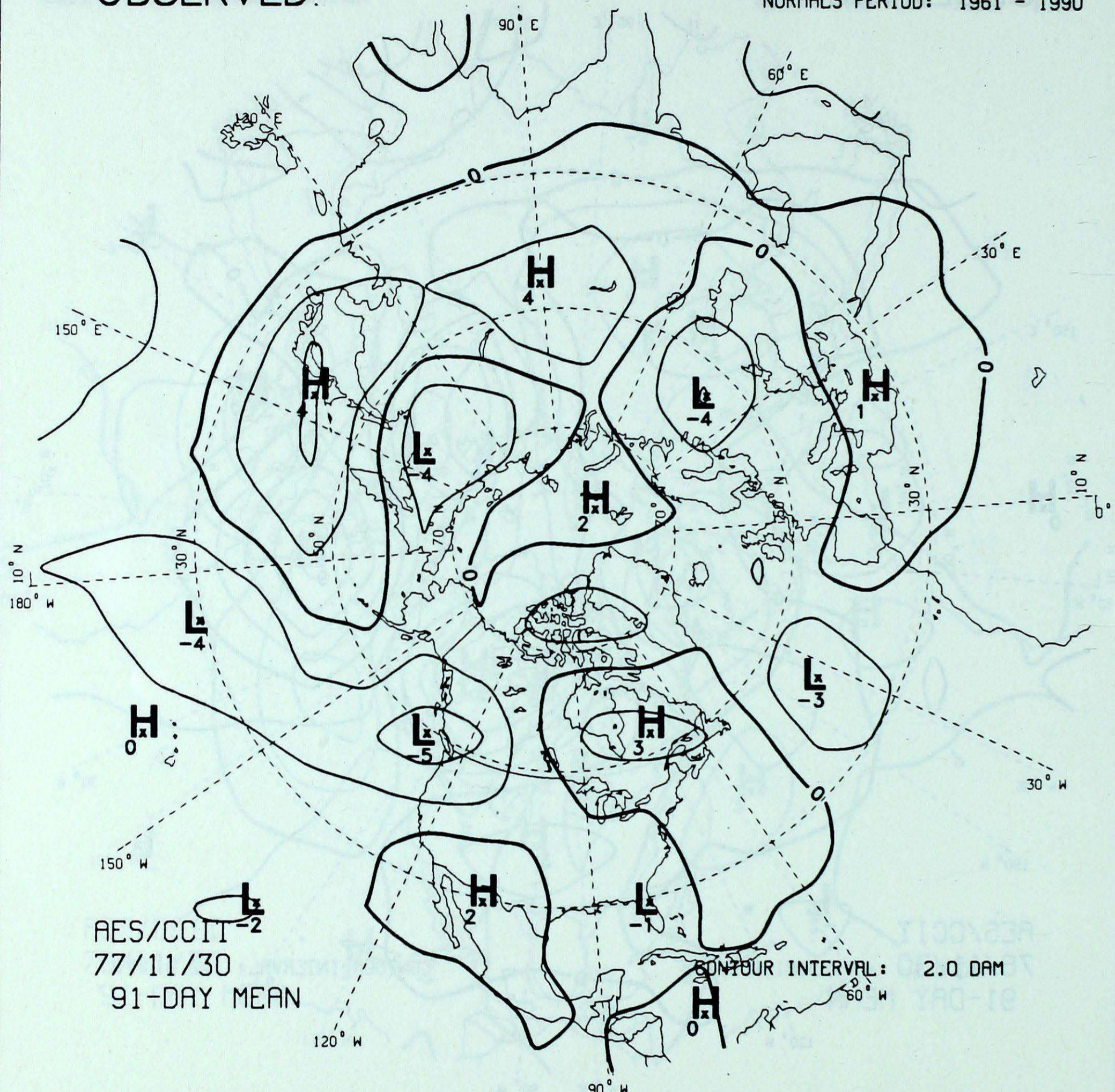
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 77 TO 30 NOV 77
91-DAY MEAN

OBSERVED.

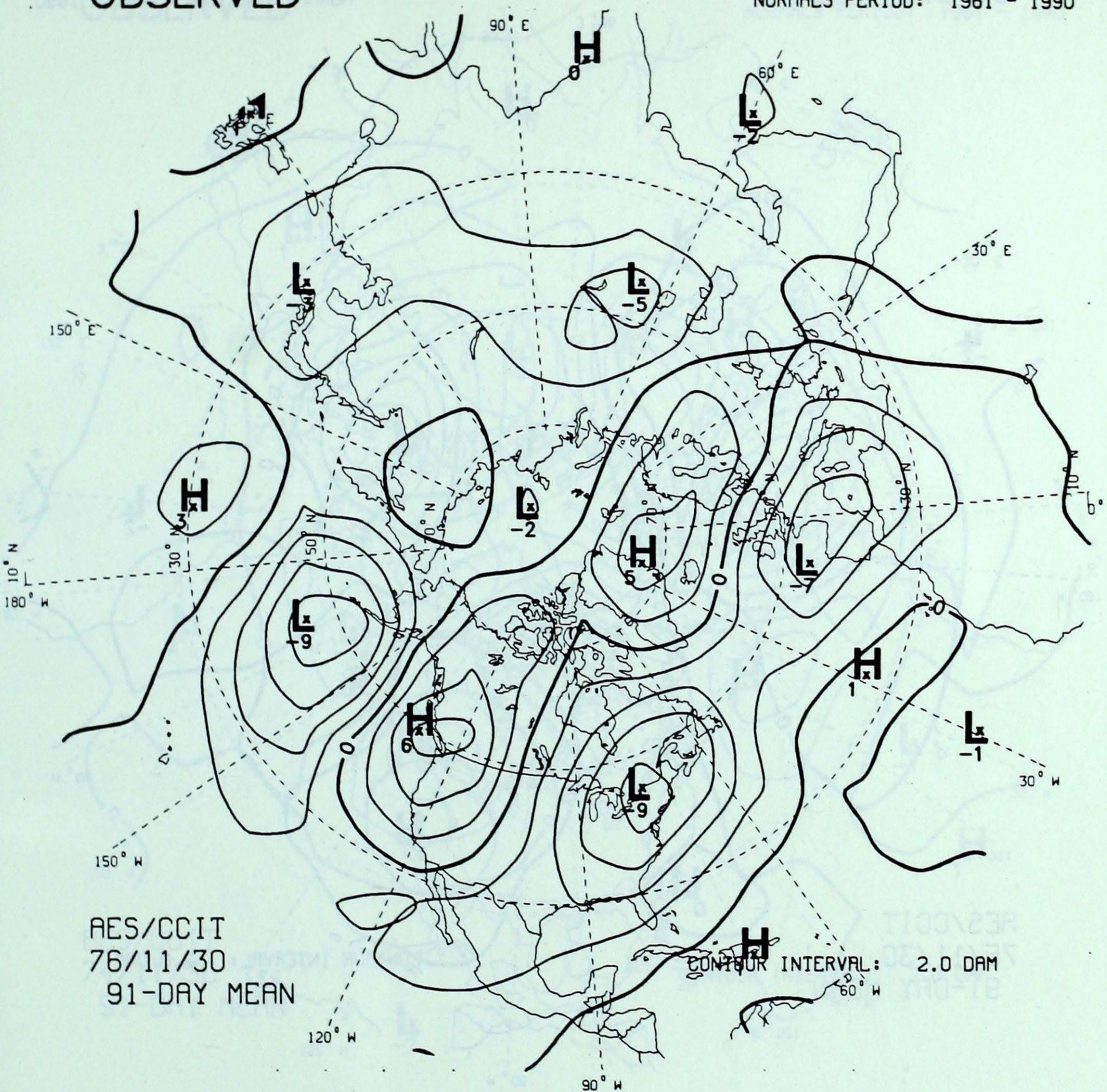
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 76 TO 30 NOV 76
91-DAY MEAN

OBSERVED

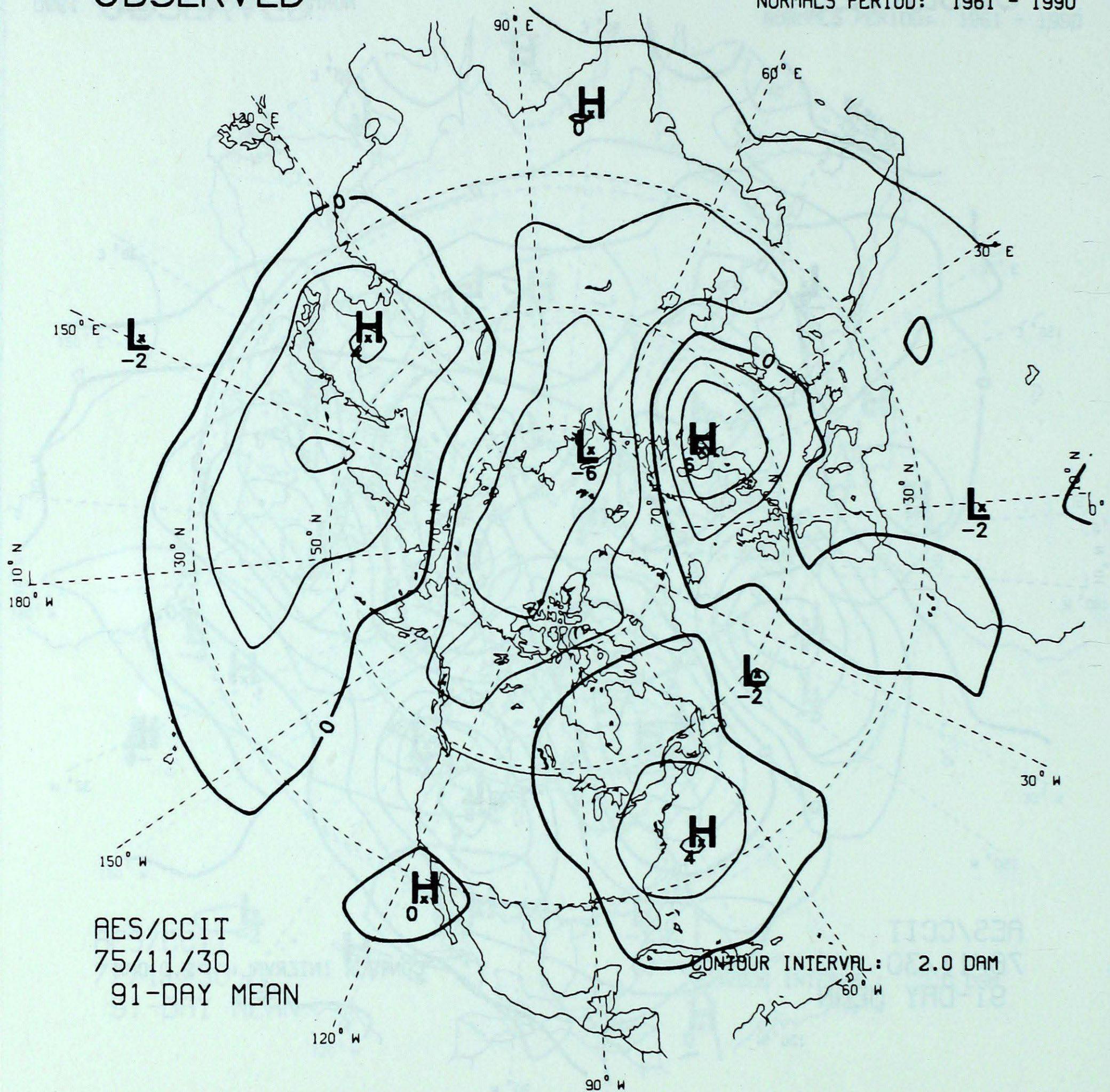
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 75 TO 30 NOV 75
91-DAY MEAN

OBSERVED

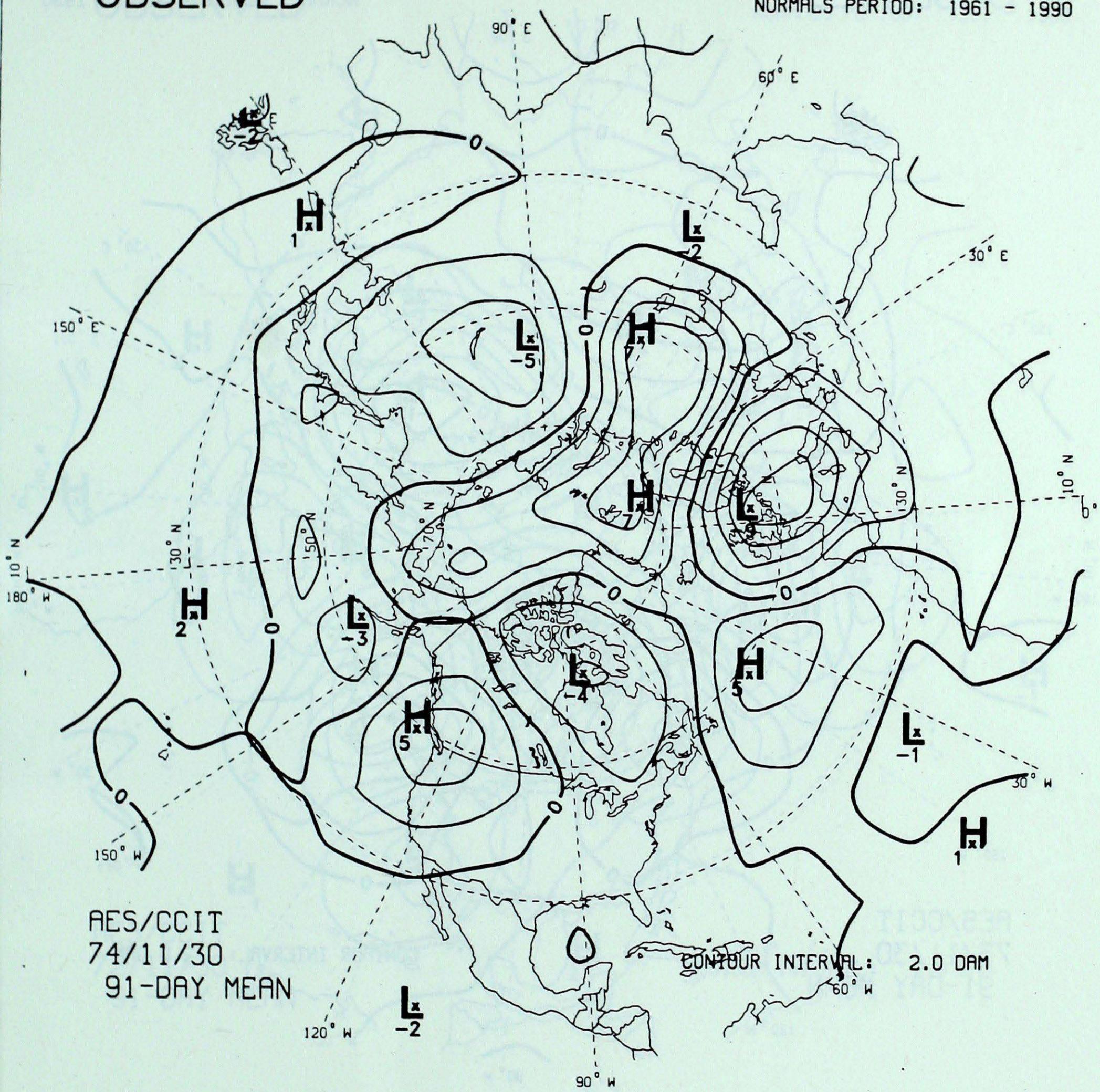
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 74 TO 30 NOV 74
91-DAY MEAN

OBSERVED

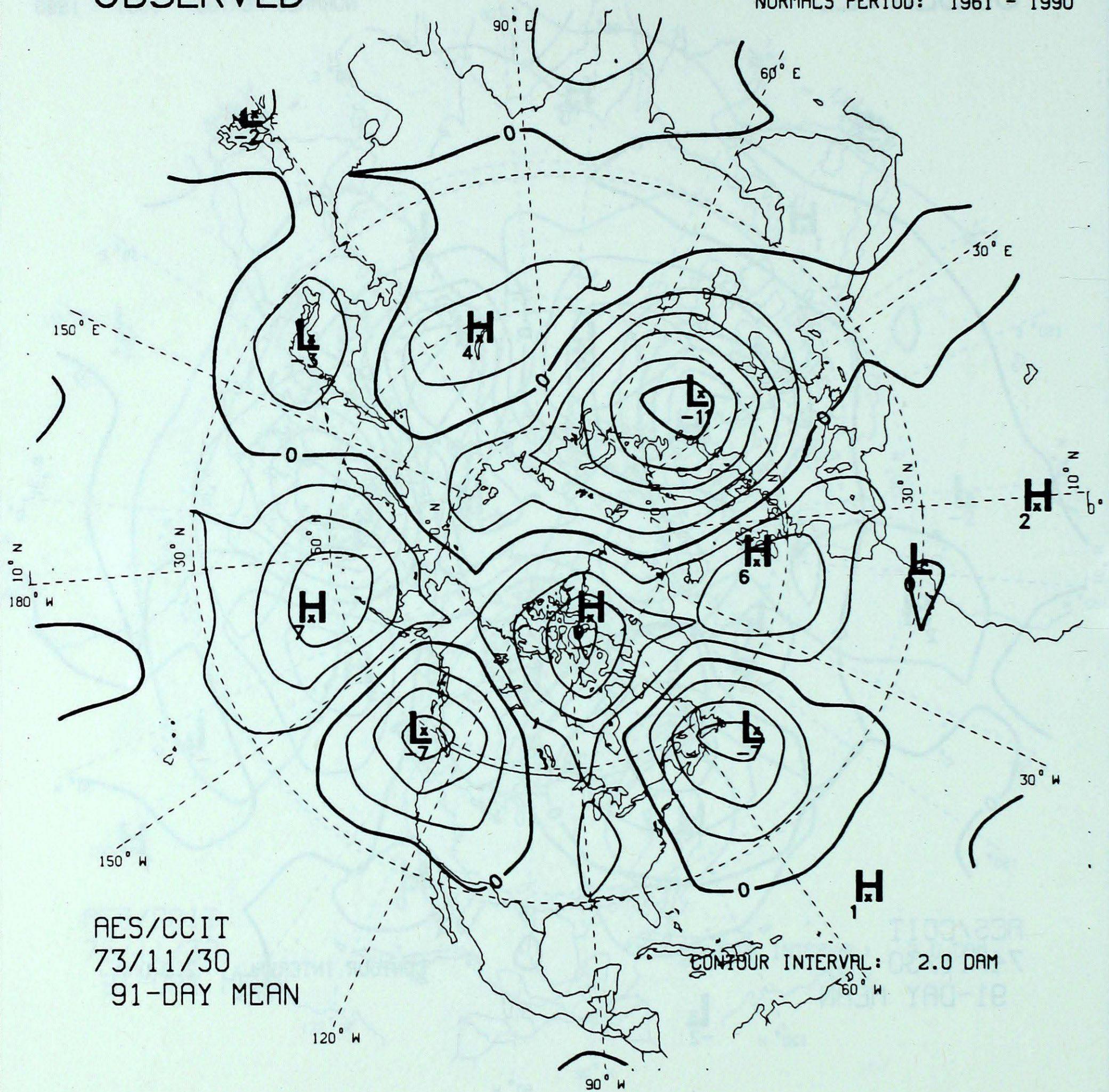
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 73 TO 30 NOV 73
91-DAY MEAN

OBSERVED

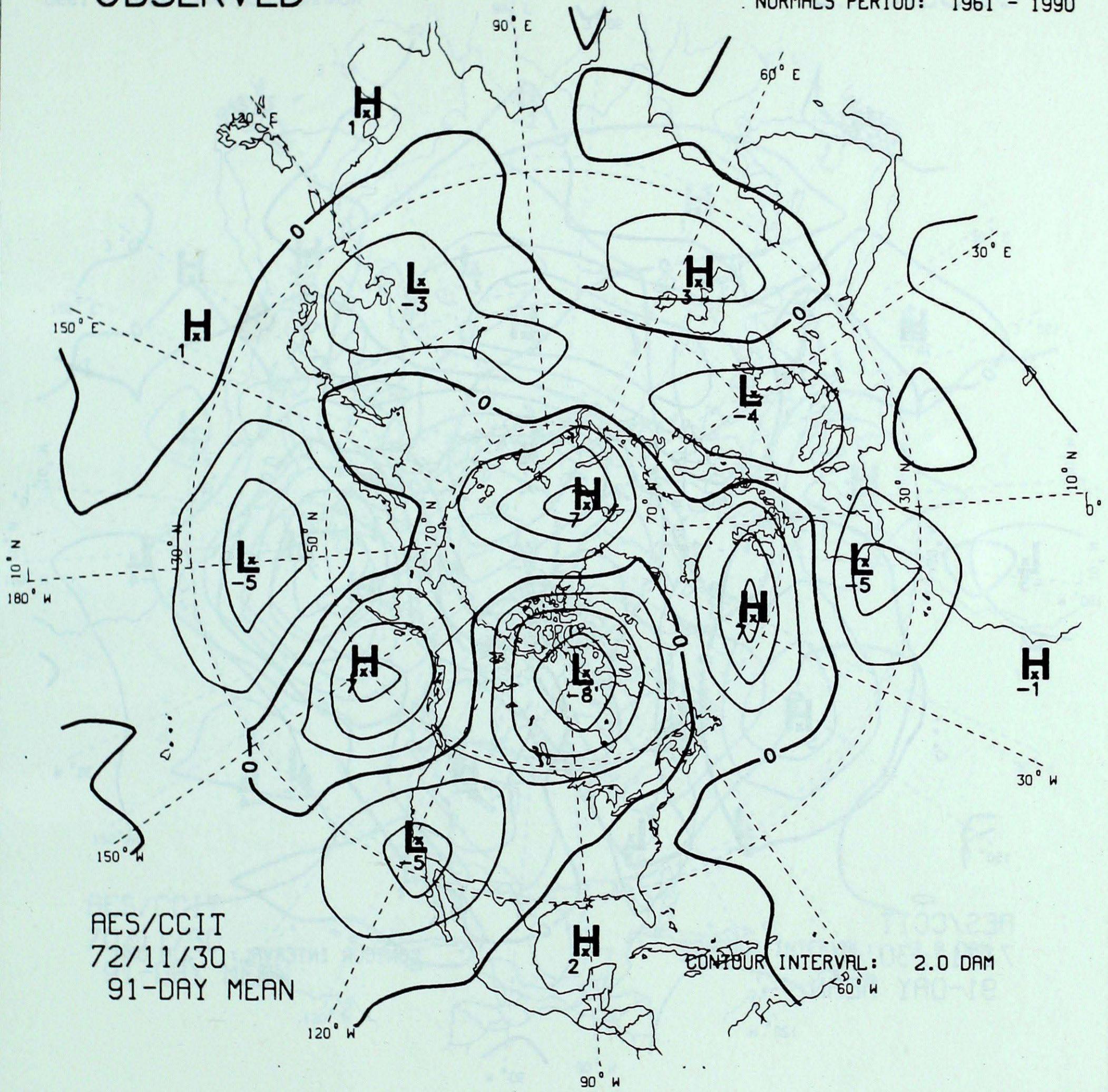
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 72 TO 30 NOV 72
91-DAY MEAN

OBSERVED

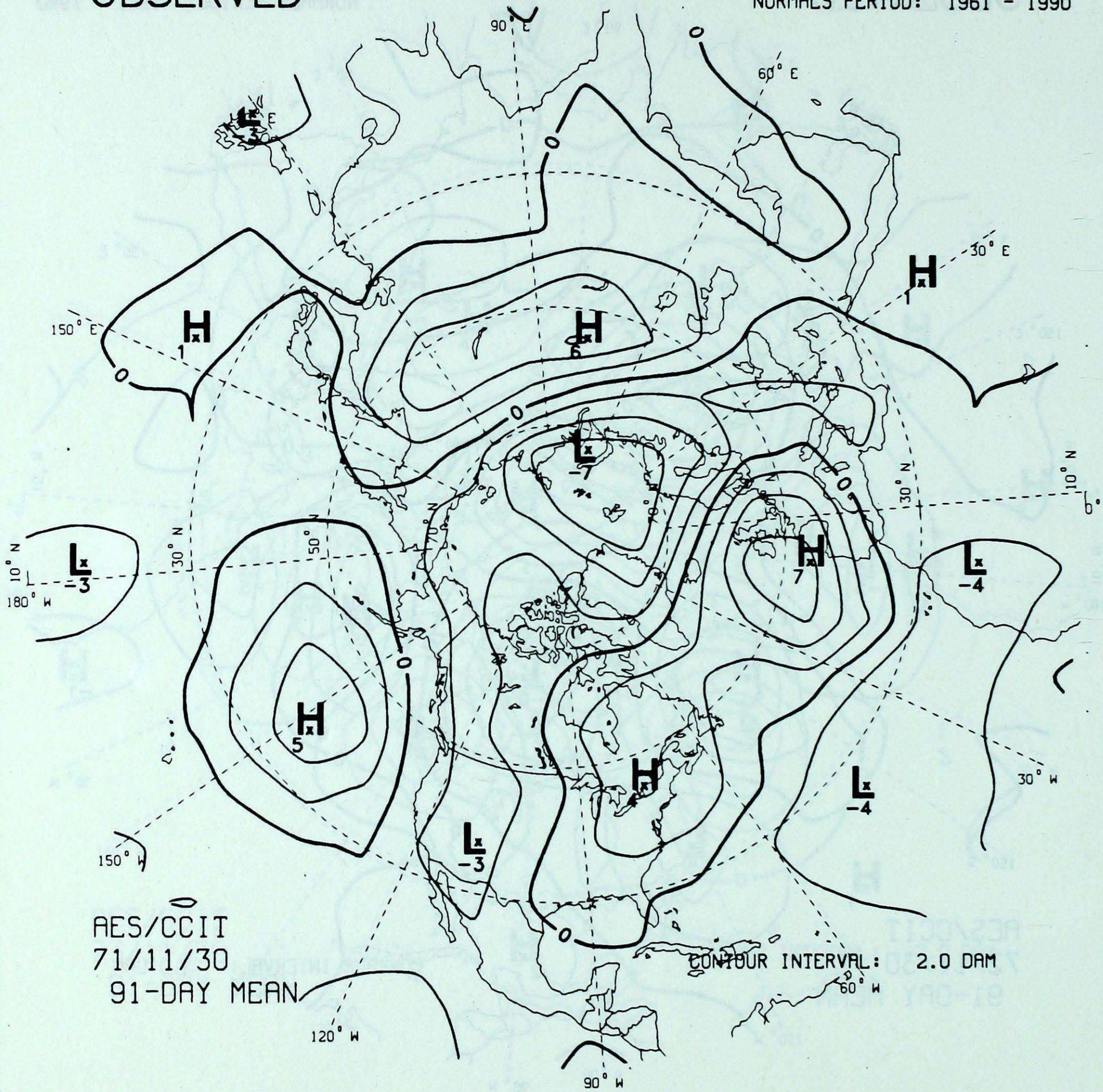
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 71 TO 30 NOV 71
91-DAY MEAN

OBSERVED

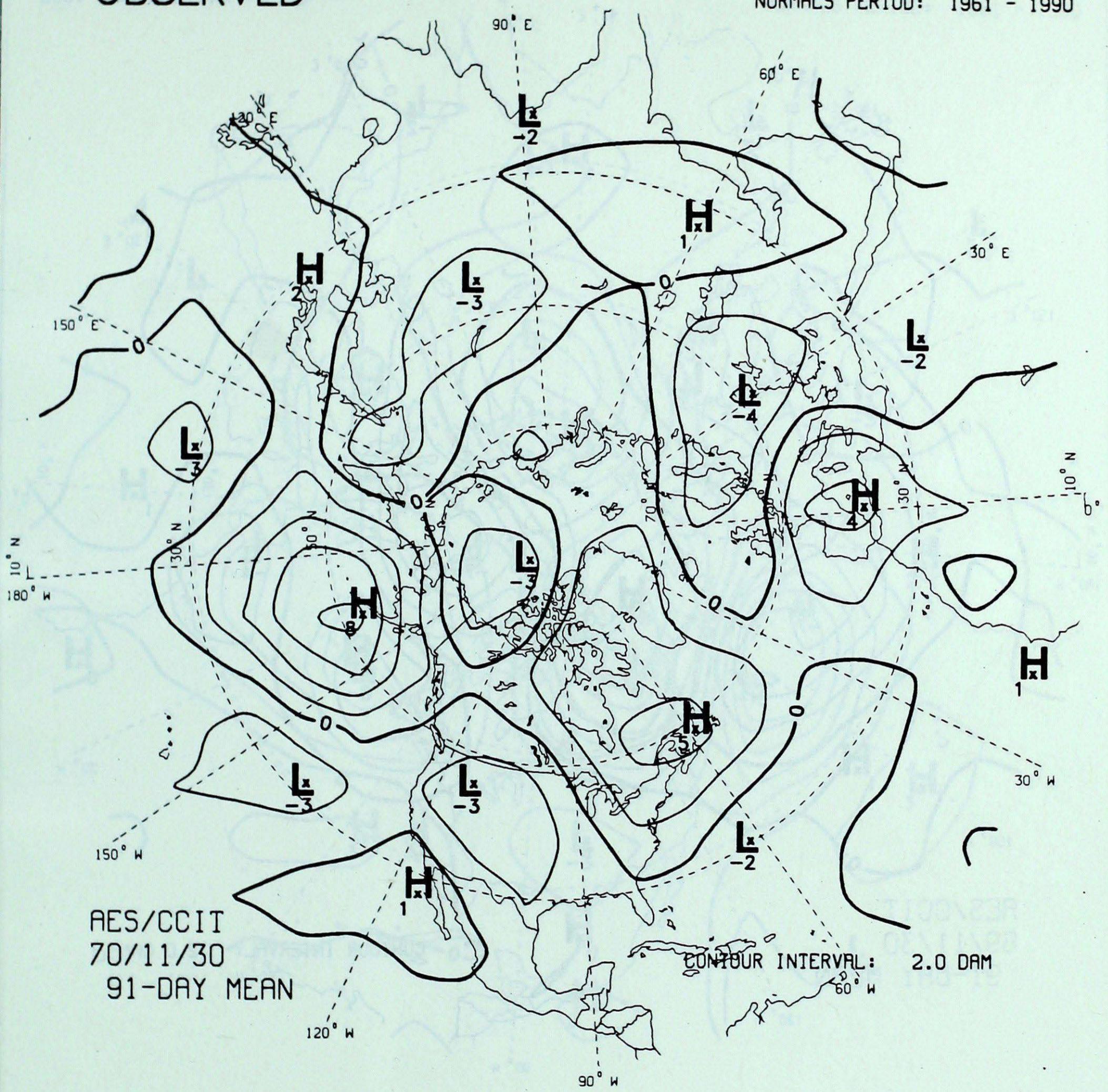
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 70 TO 30 NOV 70
91-DAY MEAN

OBSERVED

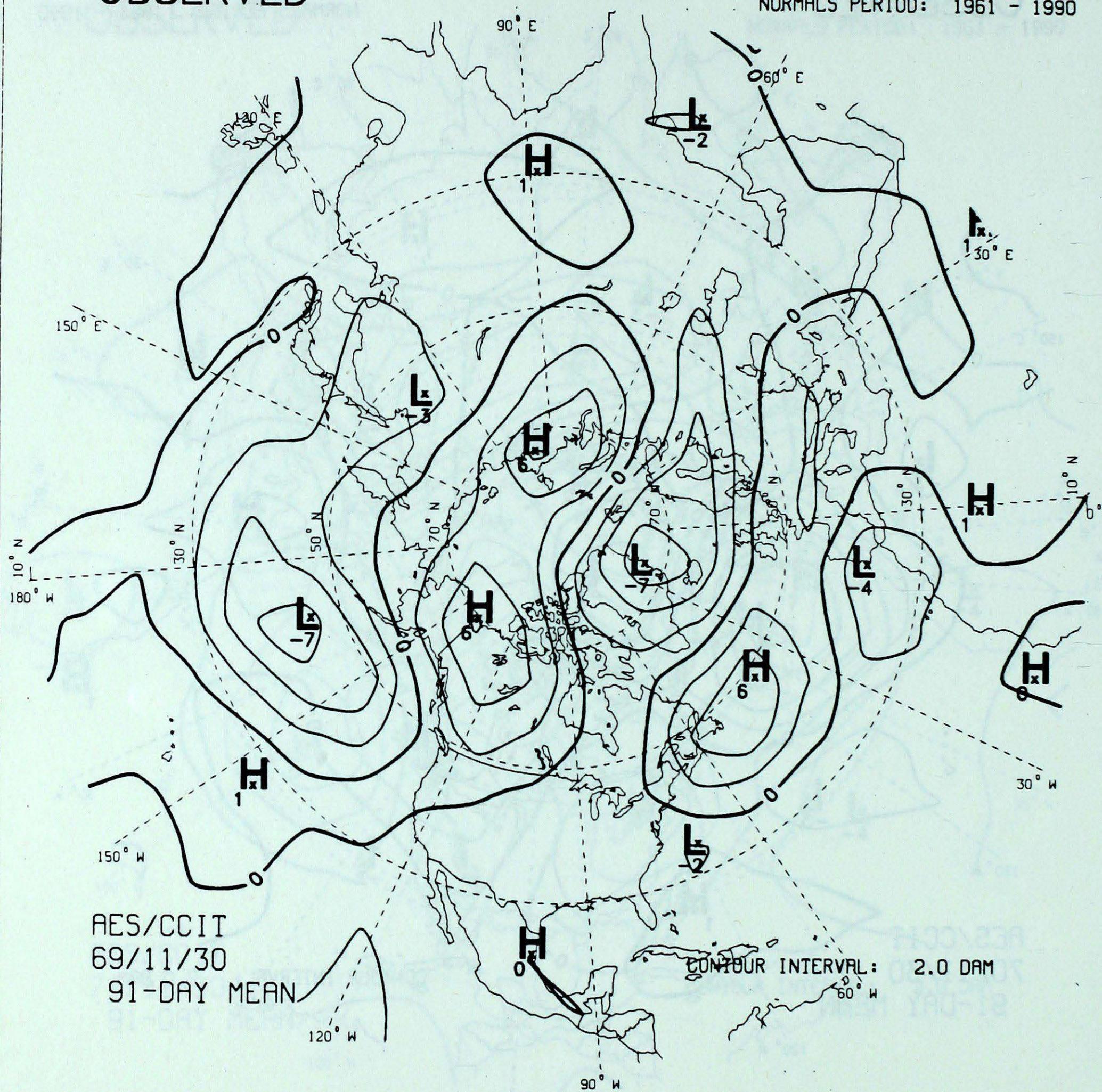
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 69 TO 30 NOV 69
91-DAY MEAN

OBSERVED

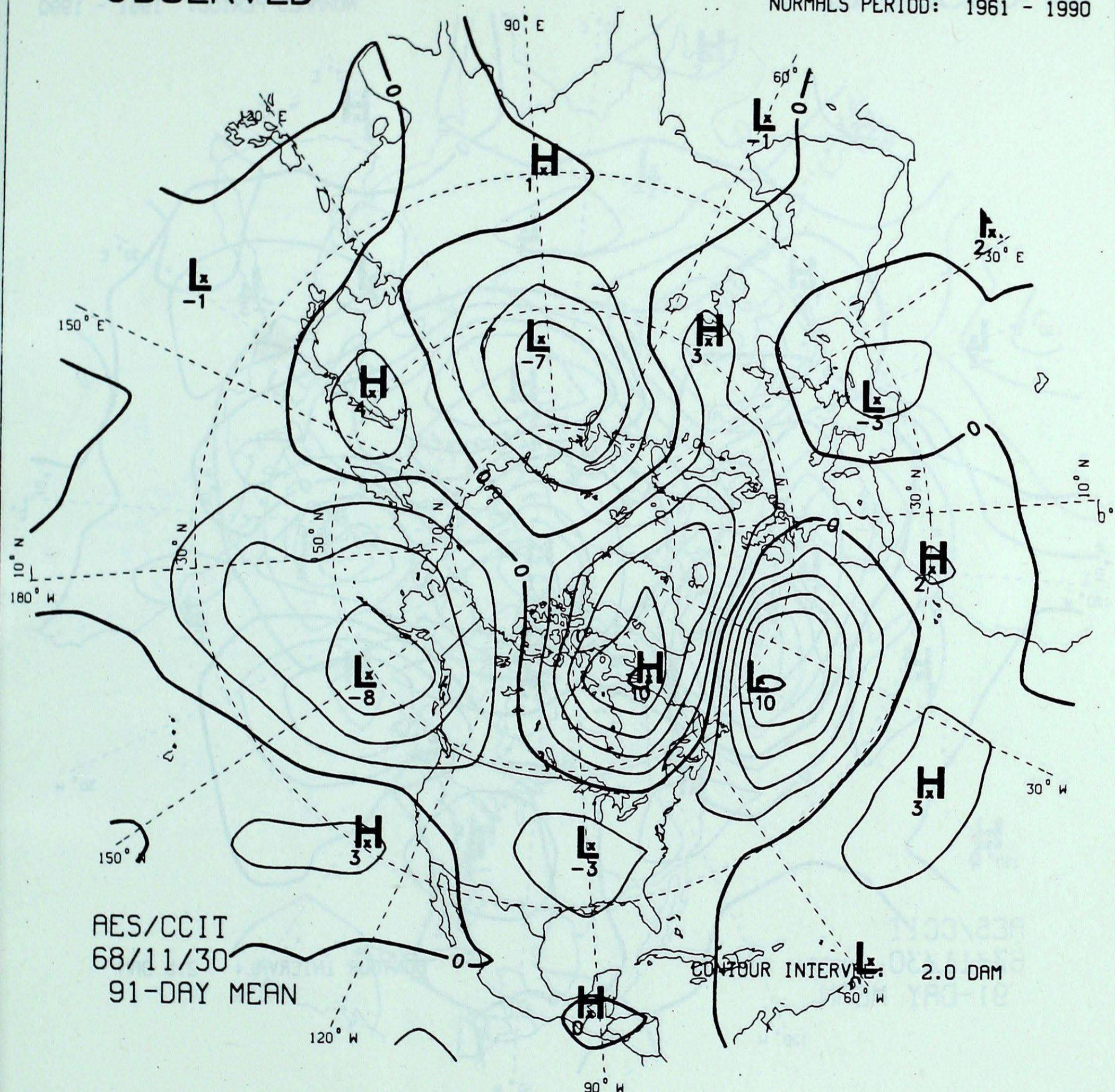
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 68 TO 30 NOV 68
91-DAY MEAN

OBSERVED

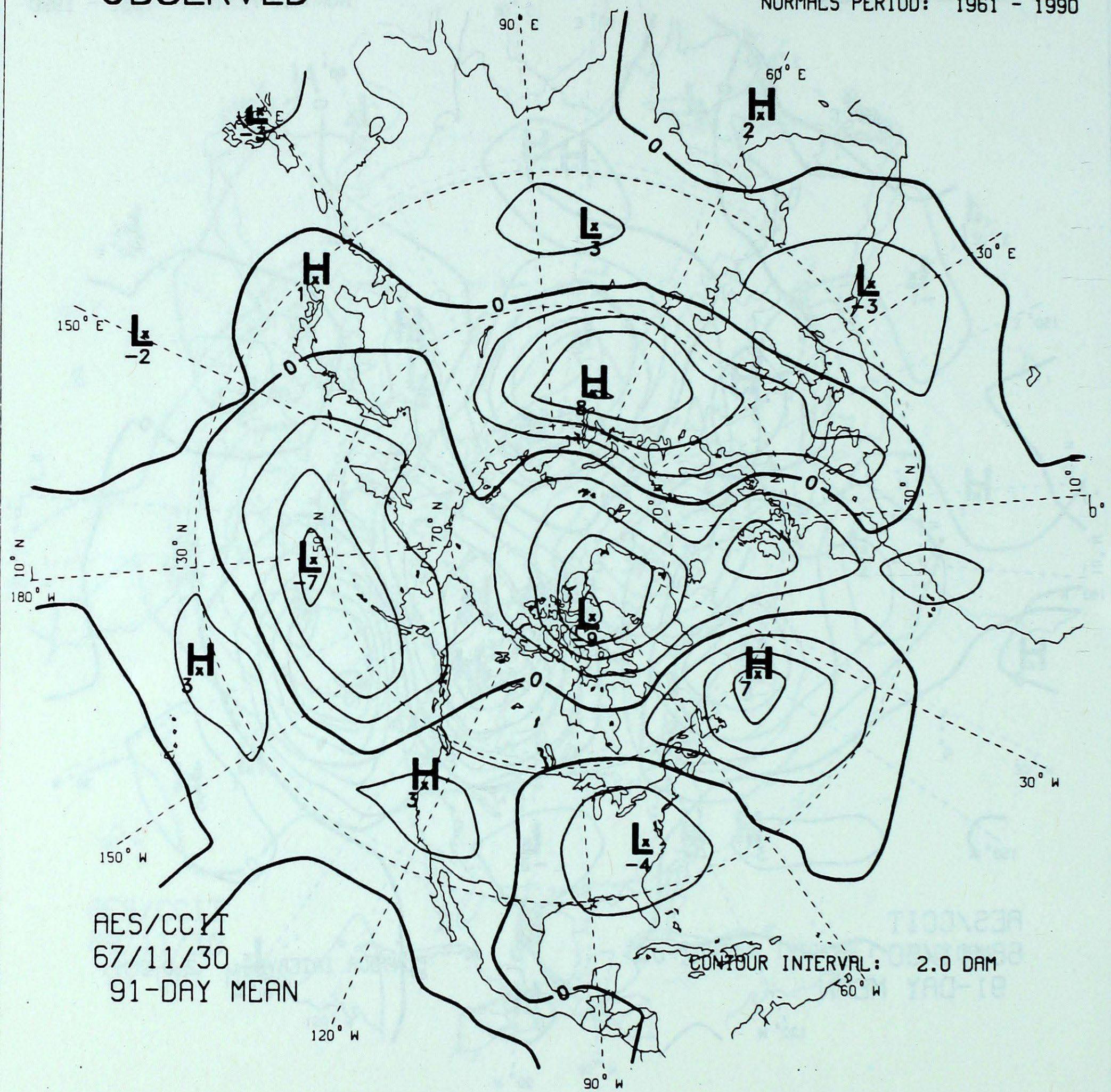
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 67 TO 30 NOV 67
91-DAY MEAN

OBSERVED

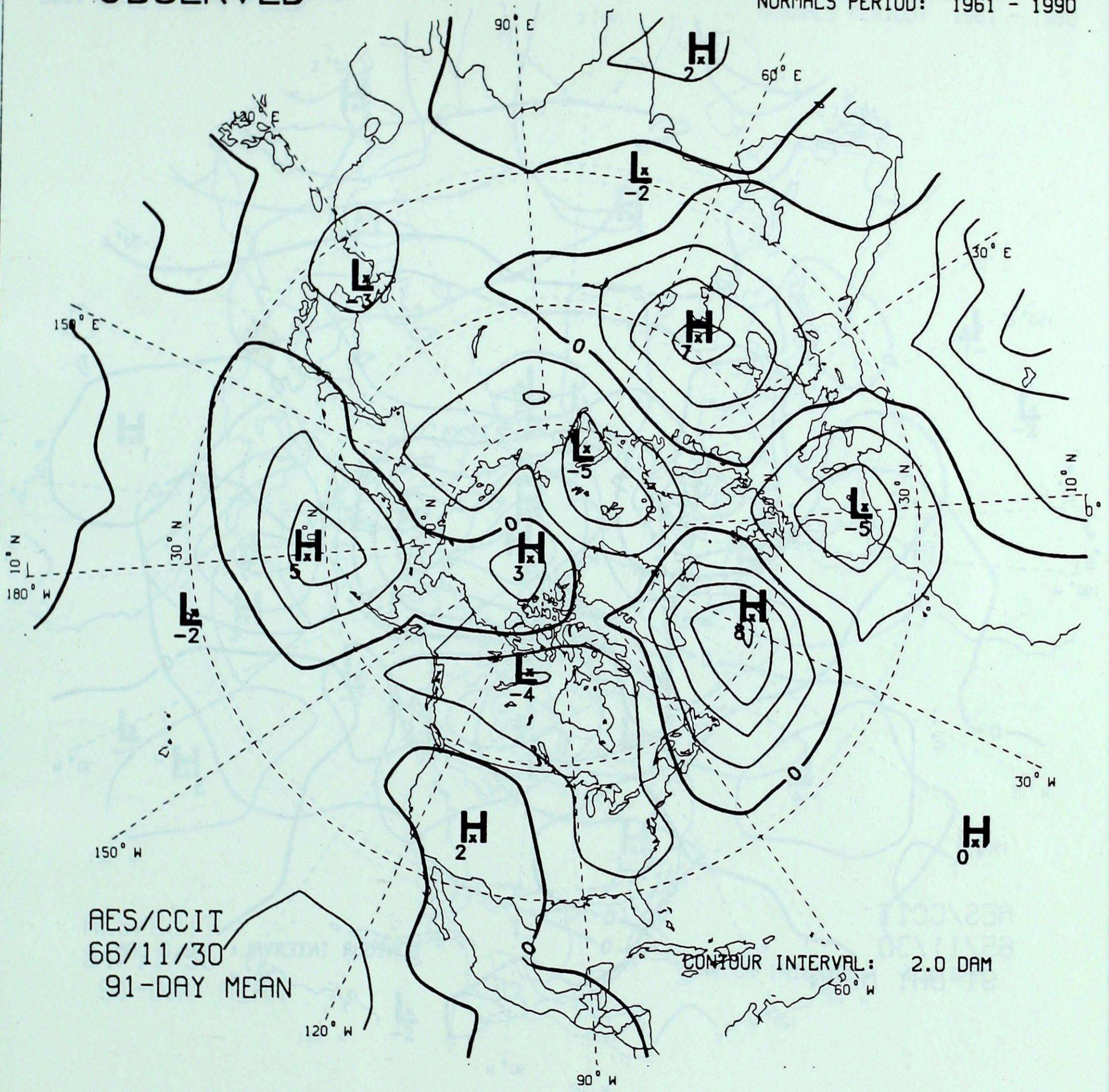
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 66 TO 30 NOV 66
91-DAY MEAN

OBSERVED

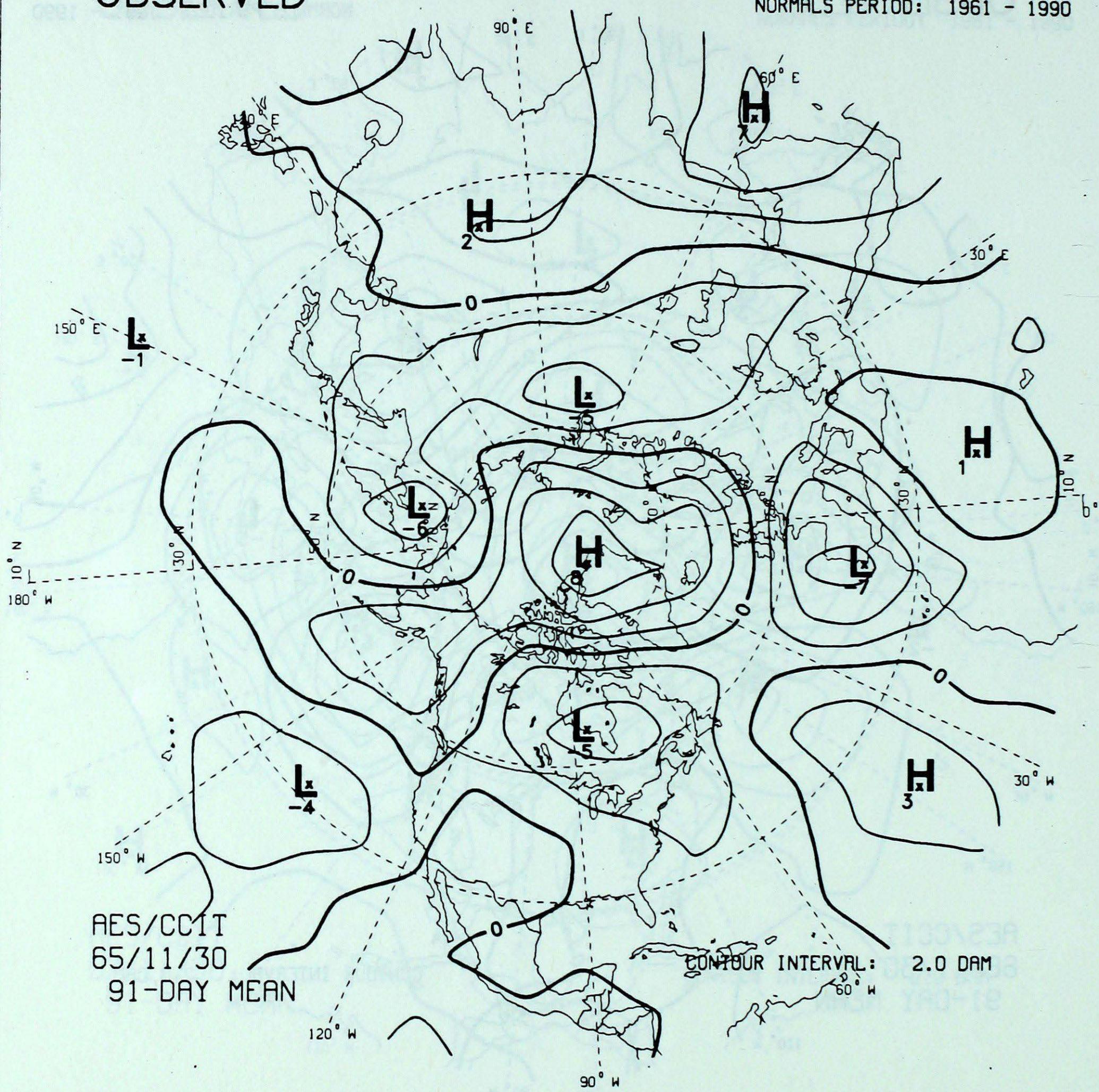
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 65 TO 30 NOV 65
91-DAY MEAN

OBSERVED

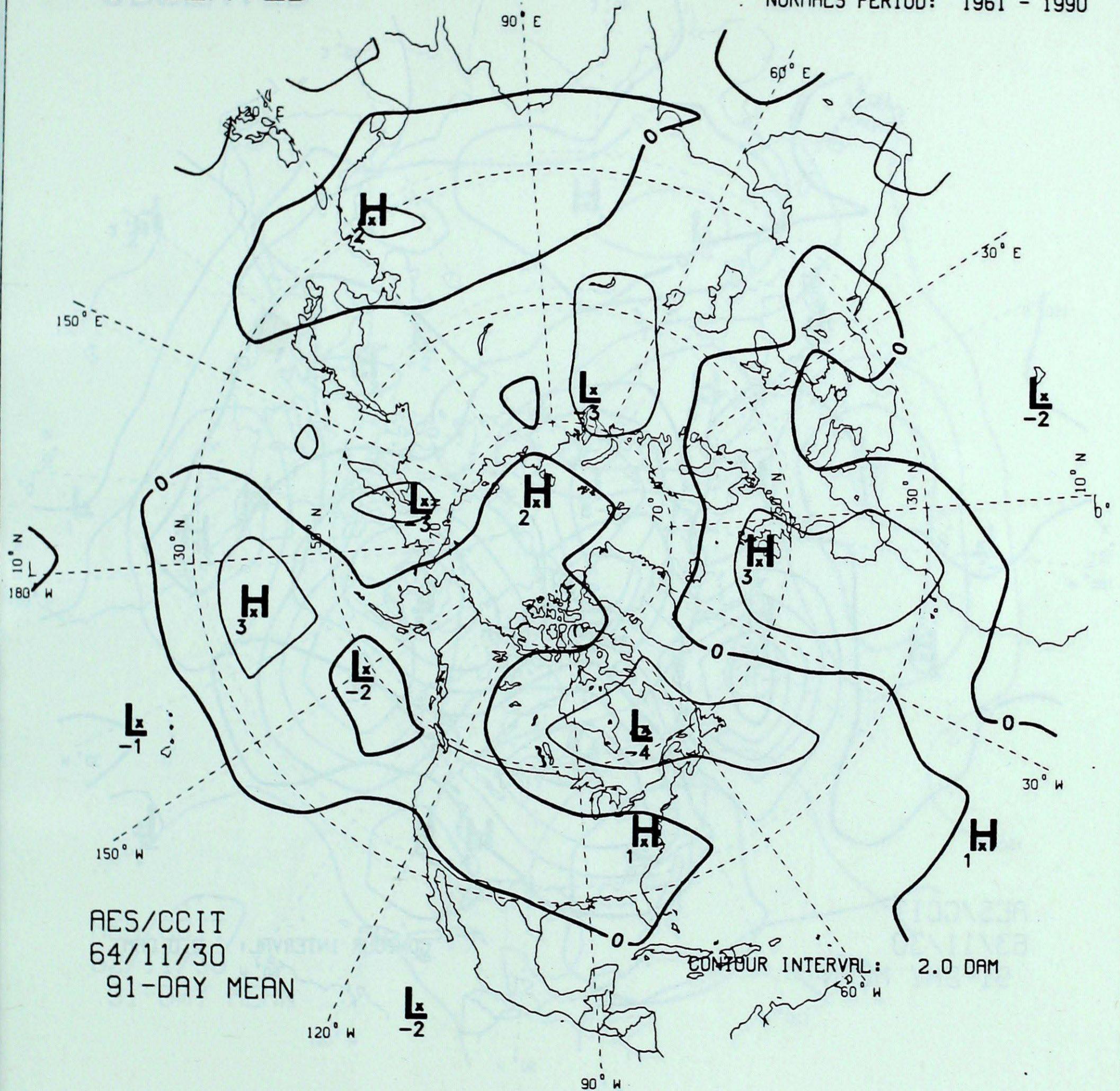
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 64 TO 30 NOV 64
91-DAY MEAN

OBSERVED

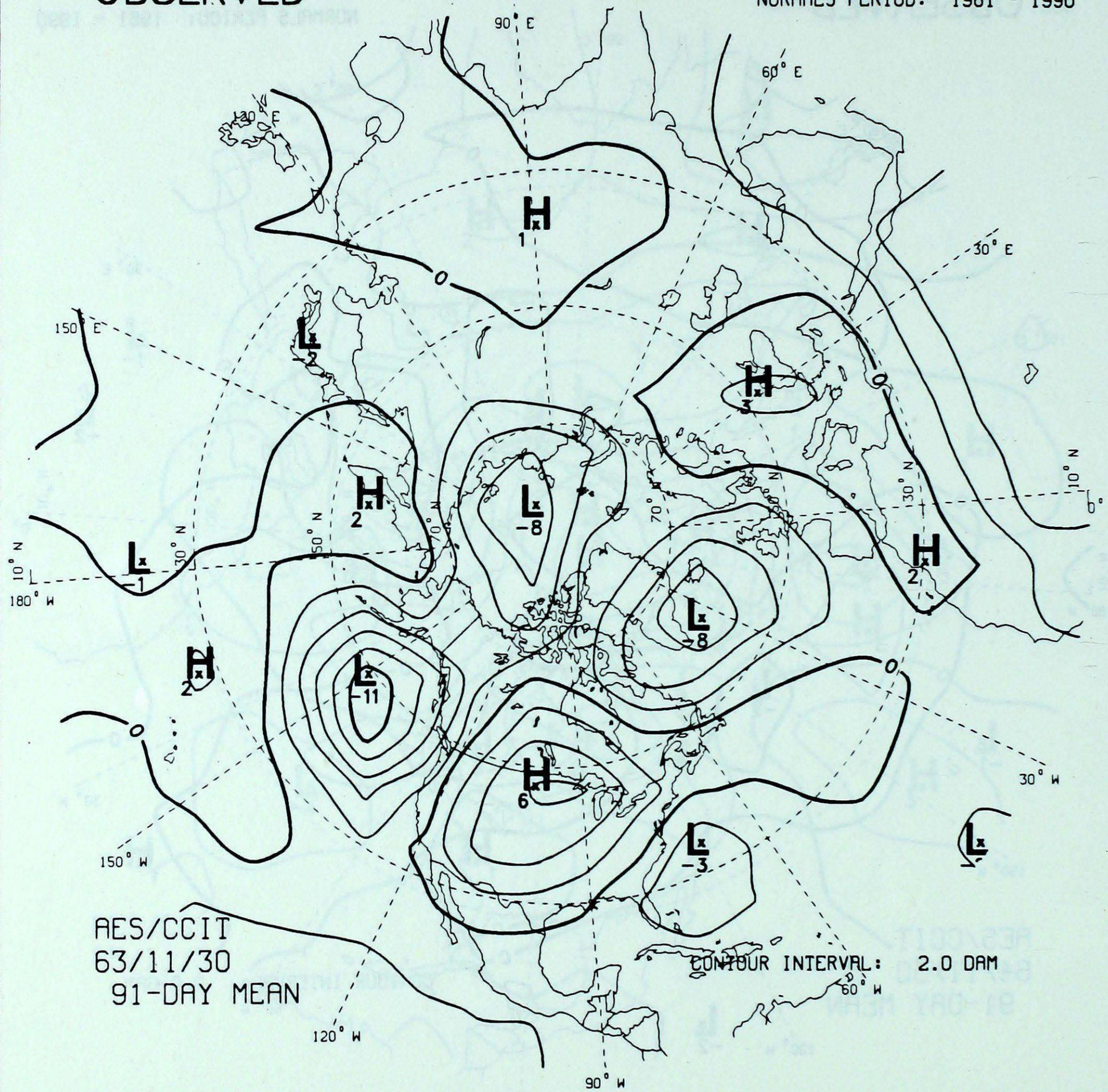
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 63 TO 30 NOV 63
91-DAY MEAN

OBSERVED

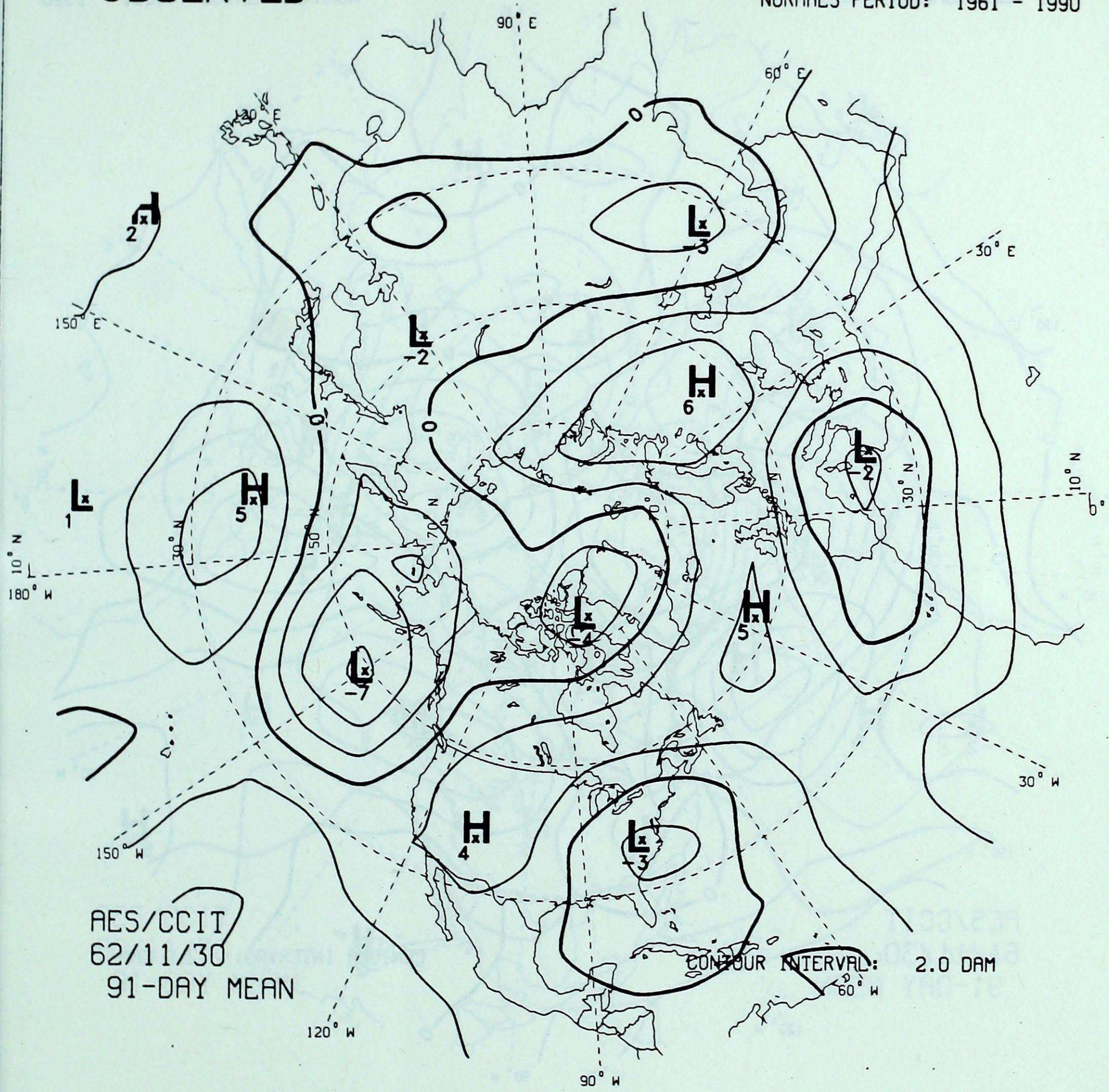
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 62 TO 30 NOV 62
91-DAY MEAN

OBSERVED

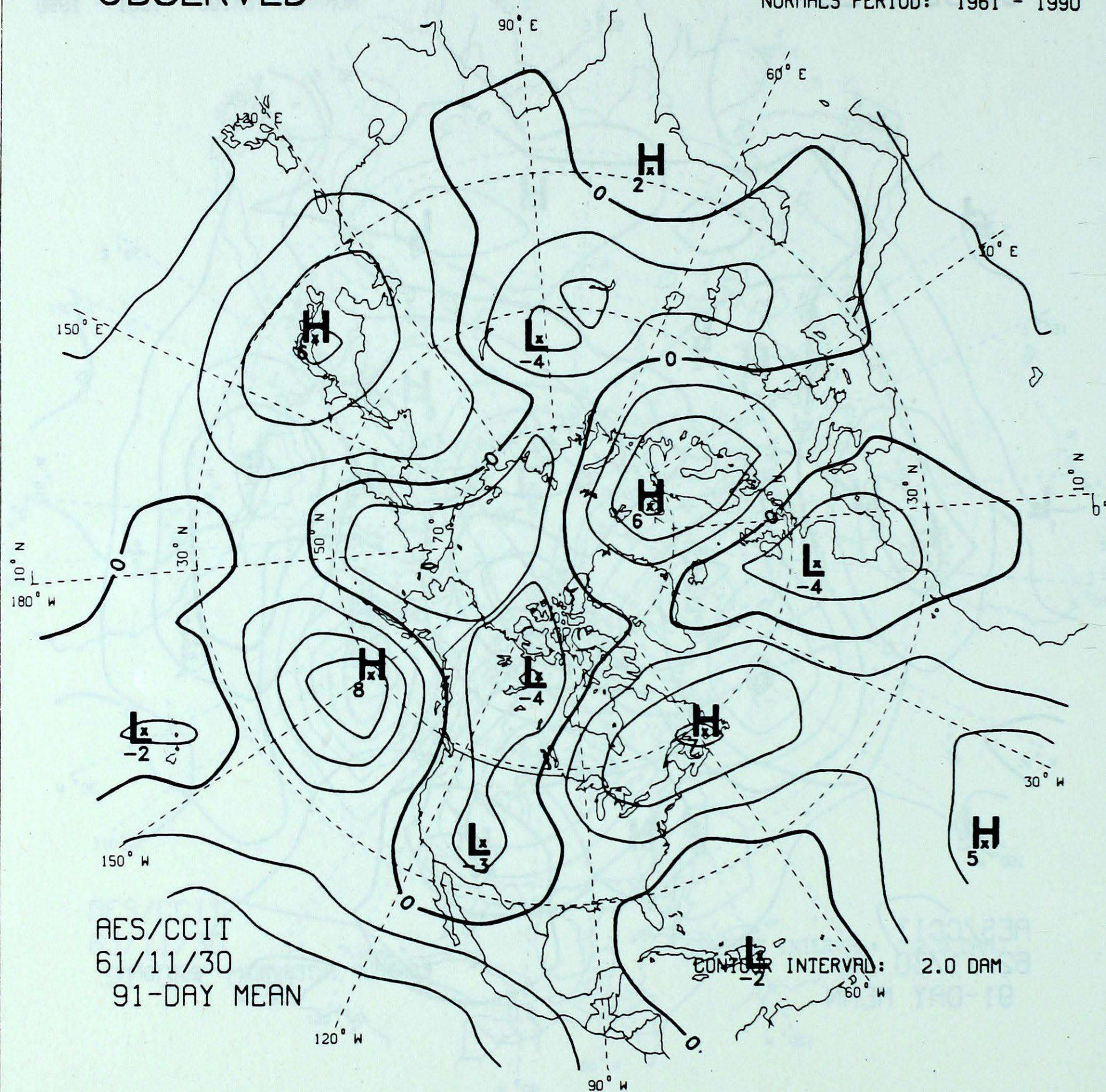
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 61 TO 30 NOV 61
91-DAY MEAN

OBSERVED

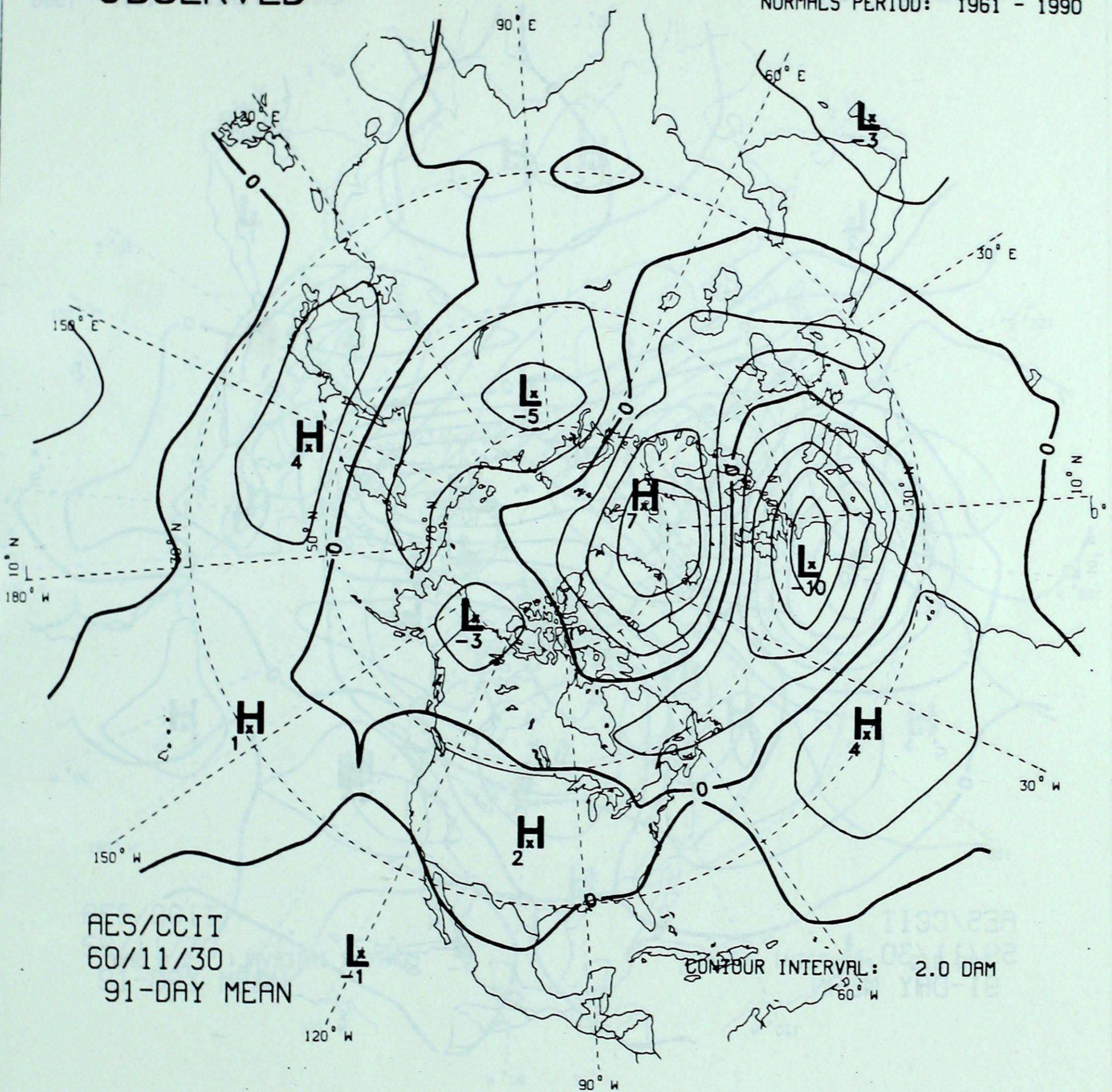
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 60 TO 30 NOV 60
91-DAY MEAN

OBSERVED

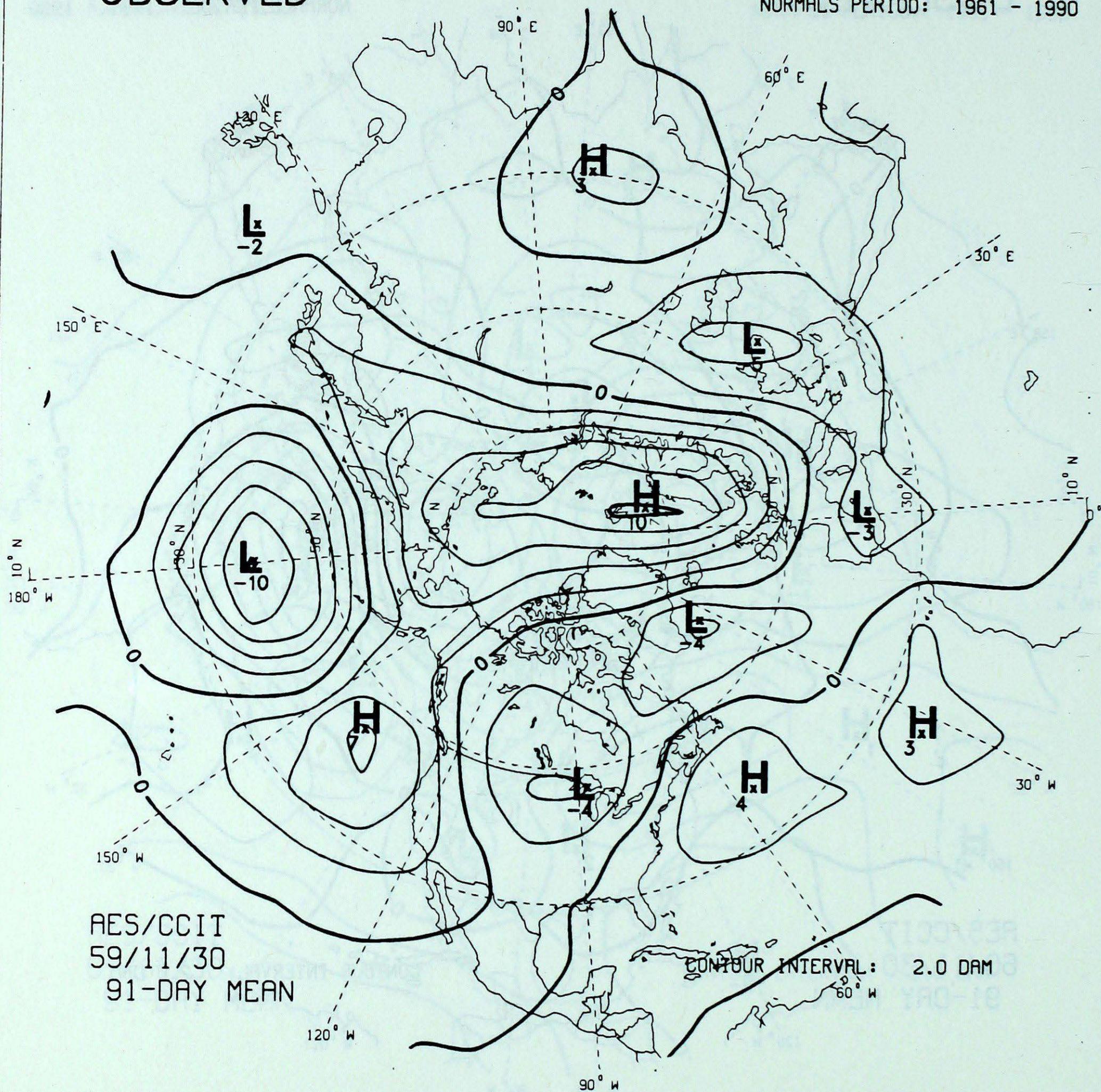
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 59 TO 30 NOV 59
91-DAY MEAN

OBSERVED

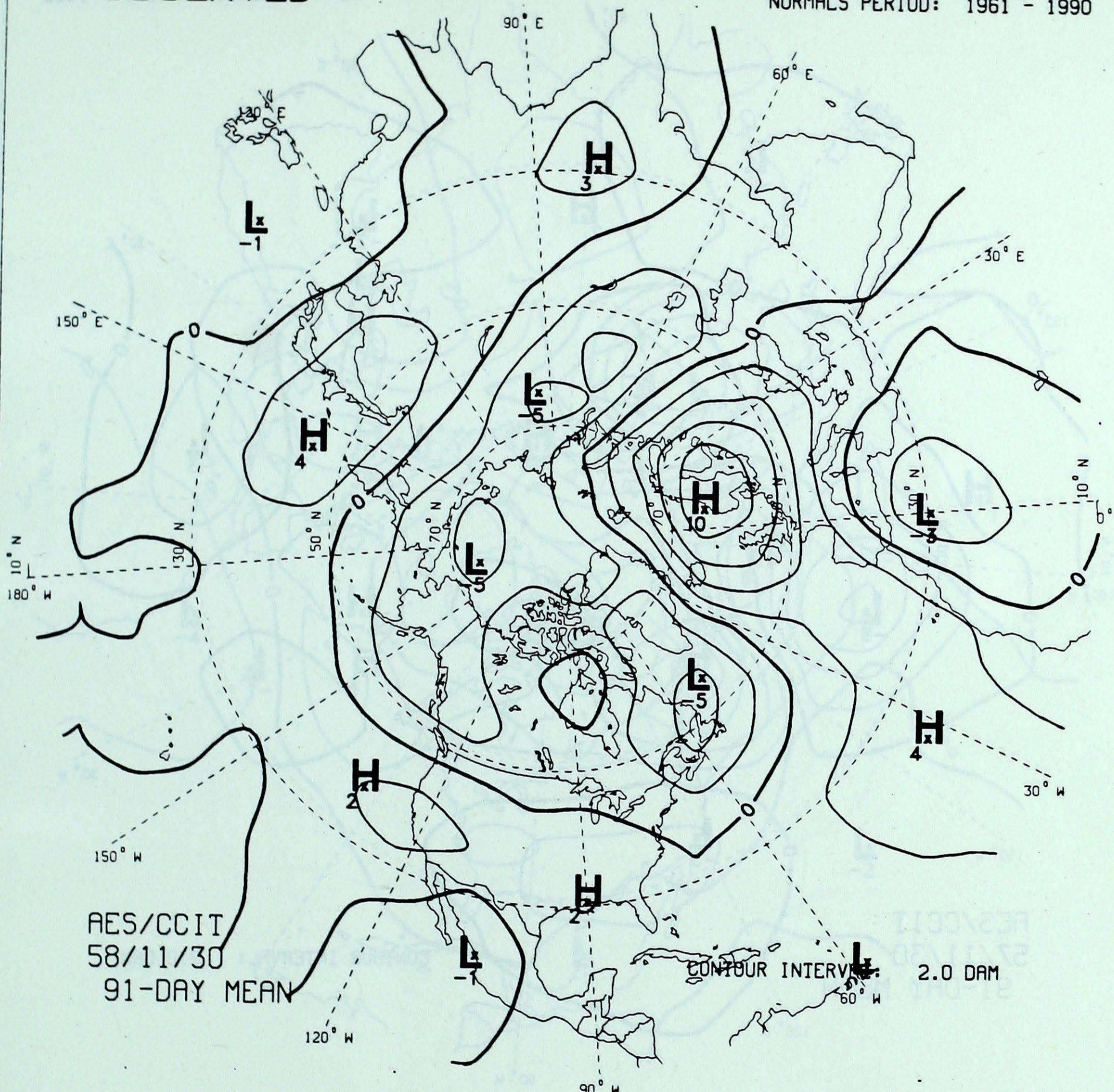
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 58 TO 30 NOV 58
91-DAY MEAN

OBSERVED

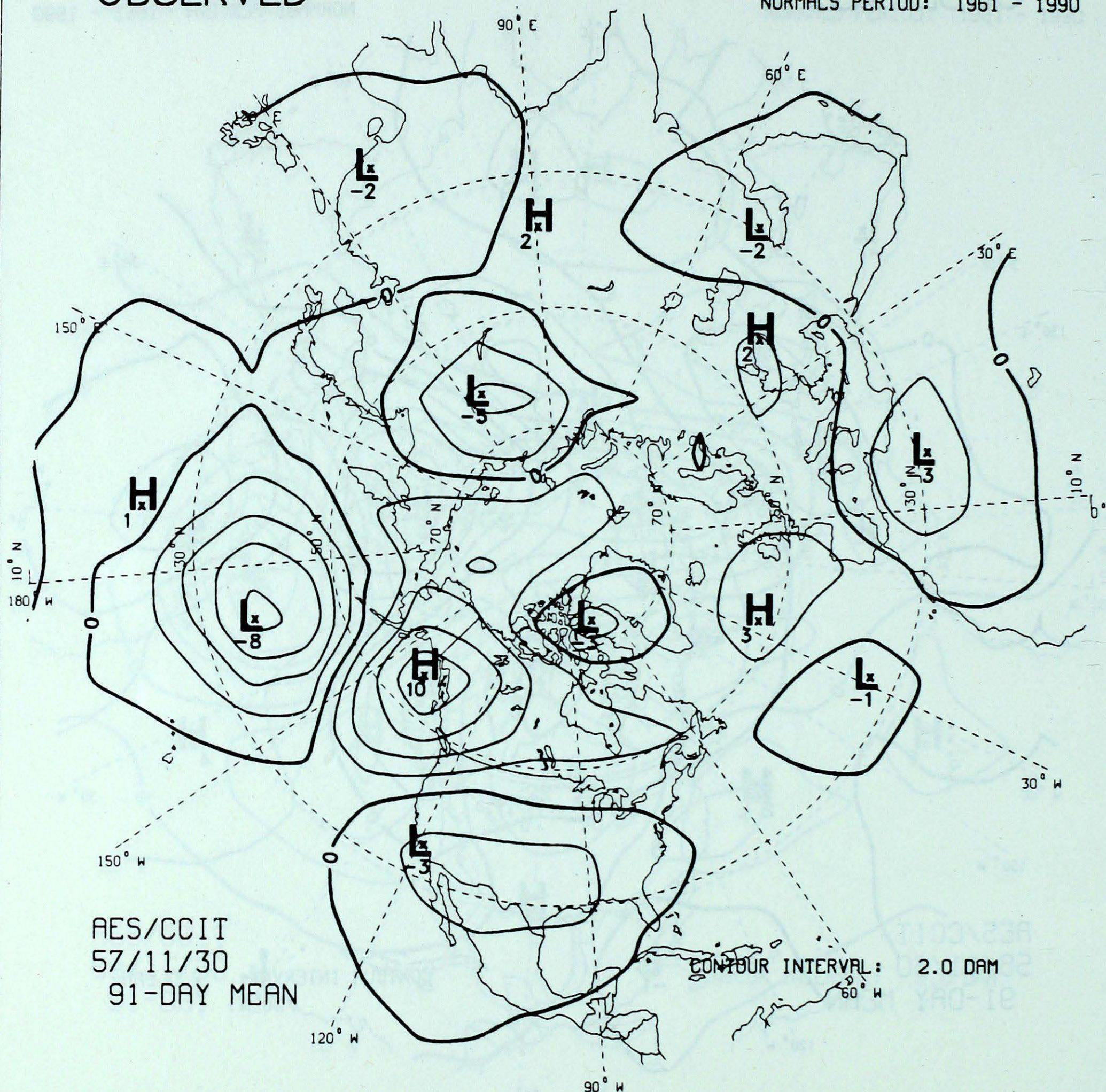
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 57 TO 30 NOV 57
91-DAY MEAN

OBSERVED

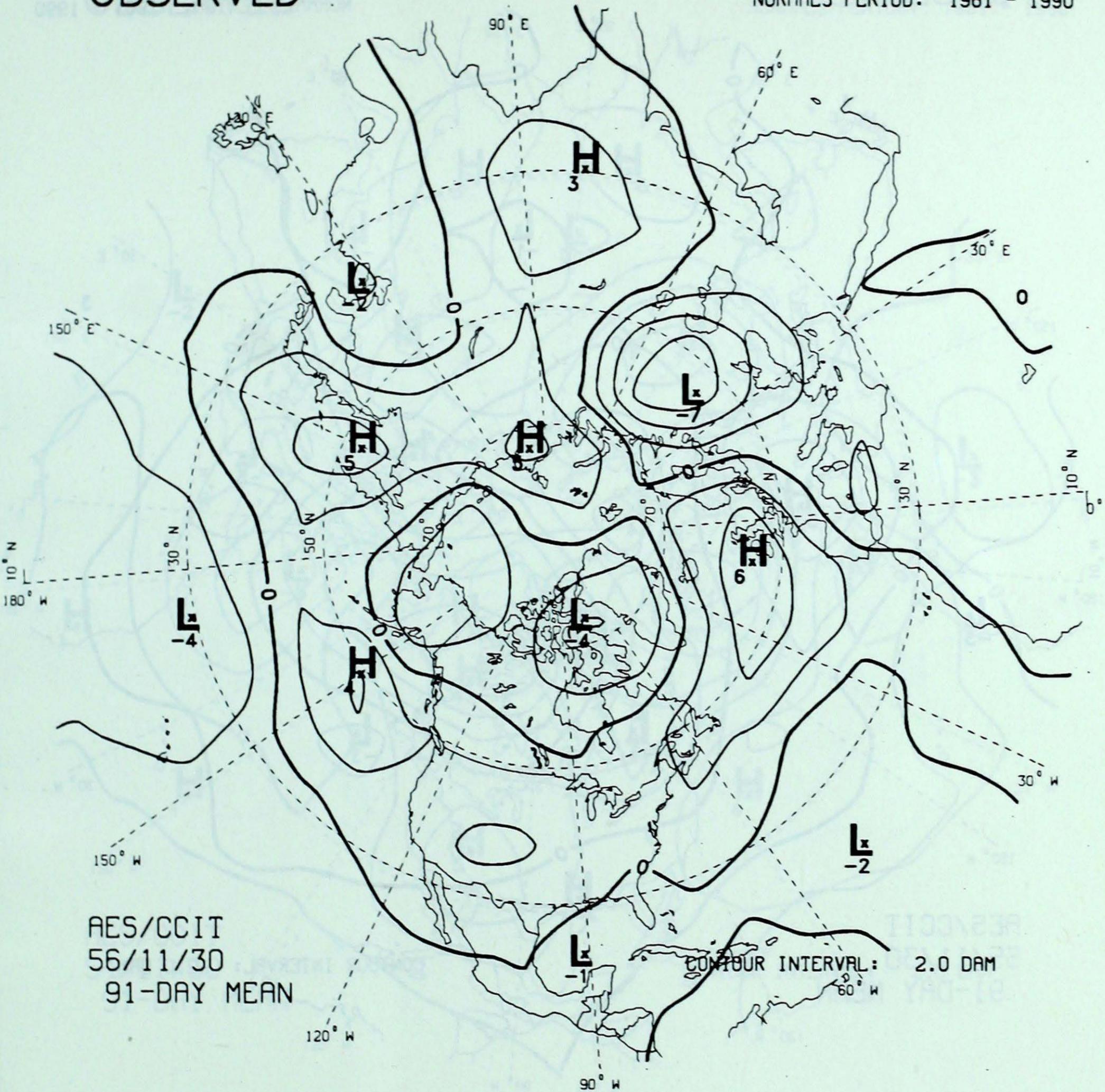
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 56 TO 30 NOV 56
91-DAY MEAN

OBSERVED

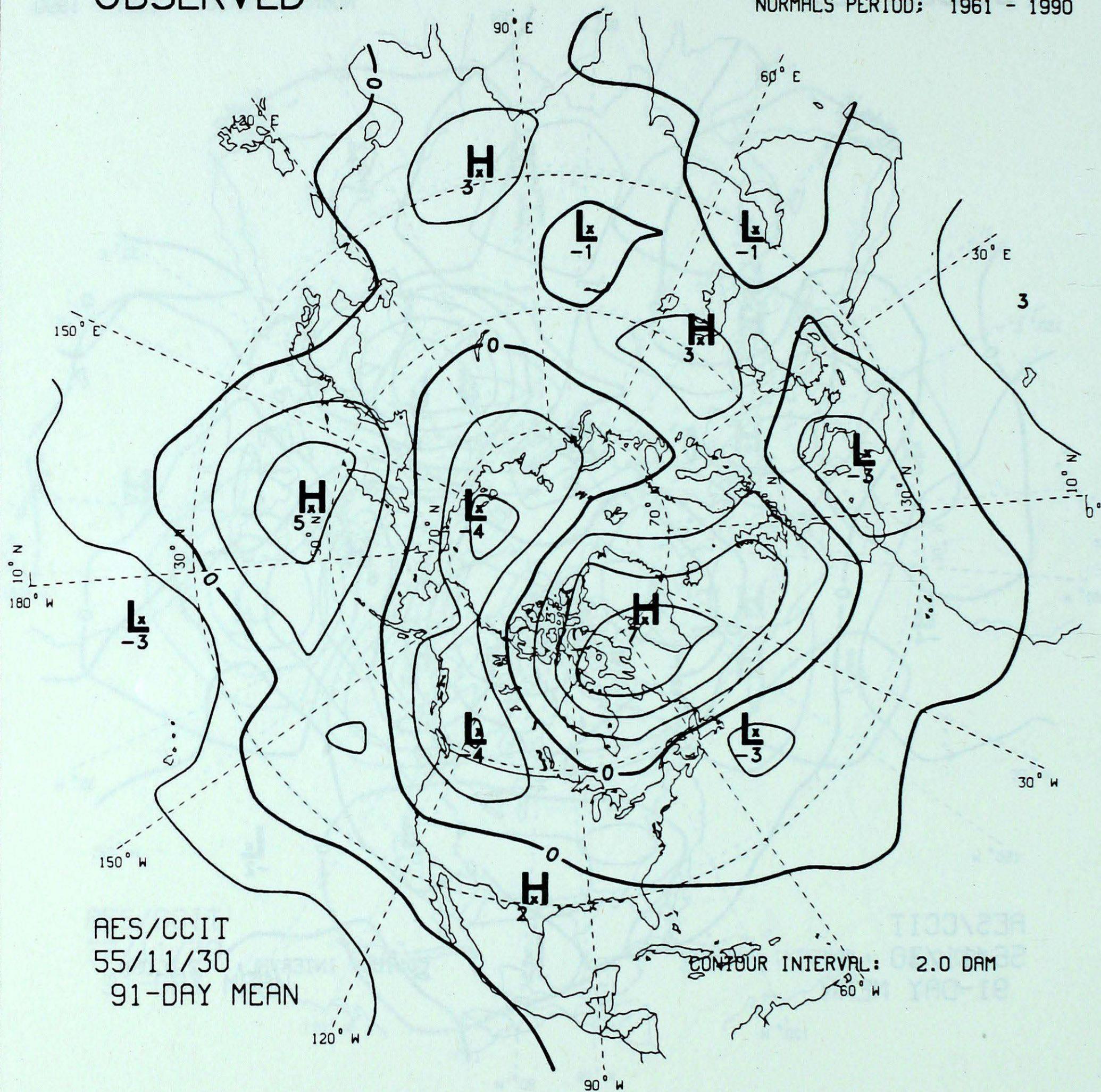
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 55 TO 30 NOV 55
91-DAY MEAN

OBSERVED

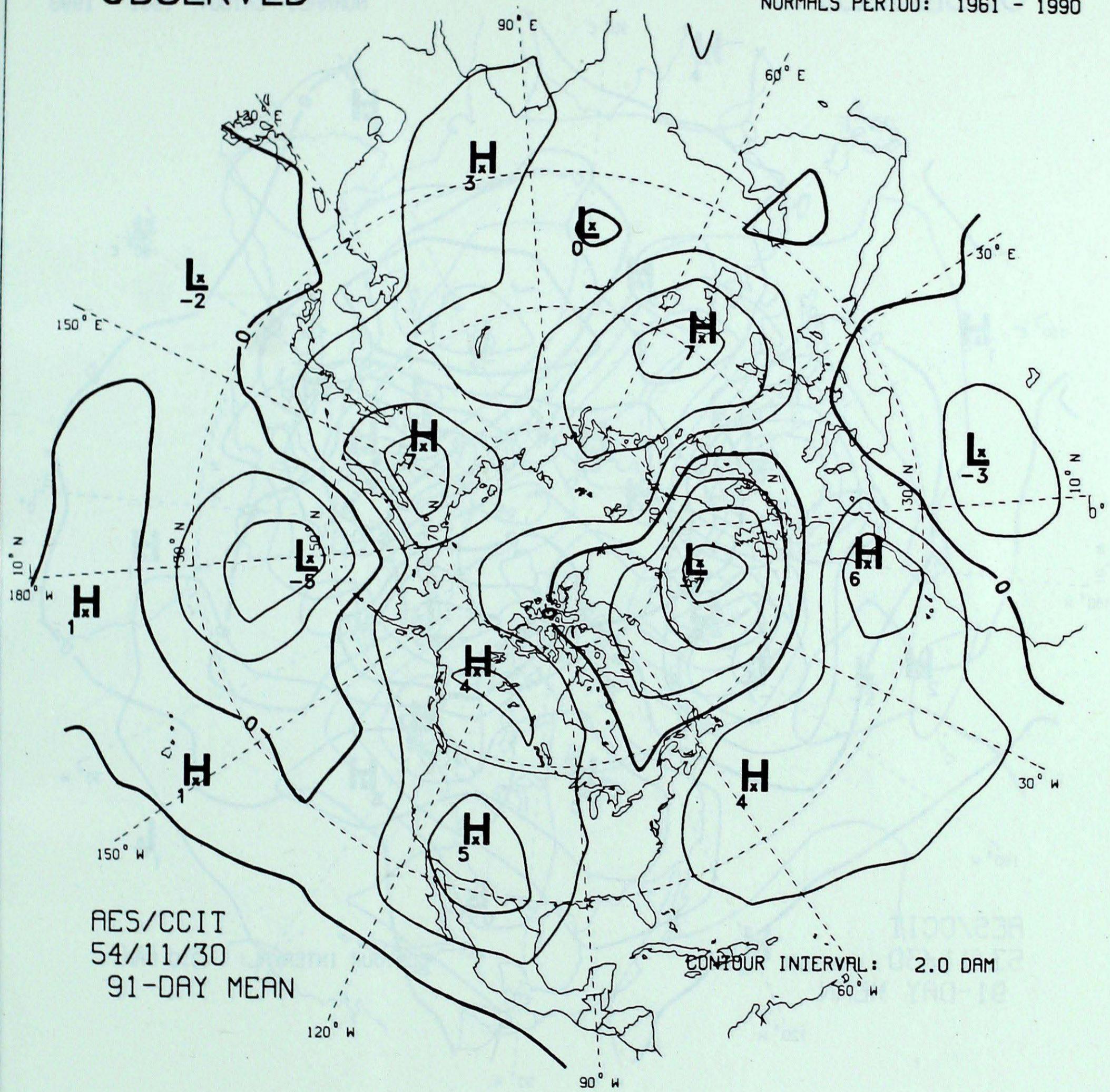
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 54 TO 30 NOV 54
91-DAY MEAN

OBSERVED

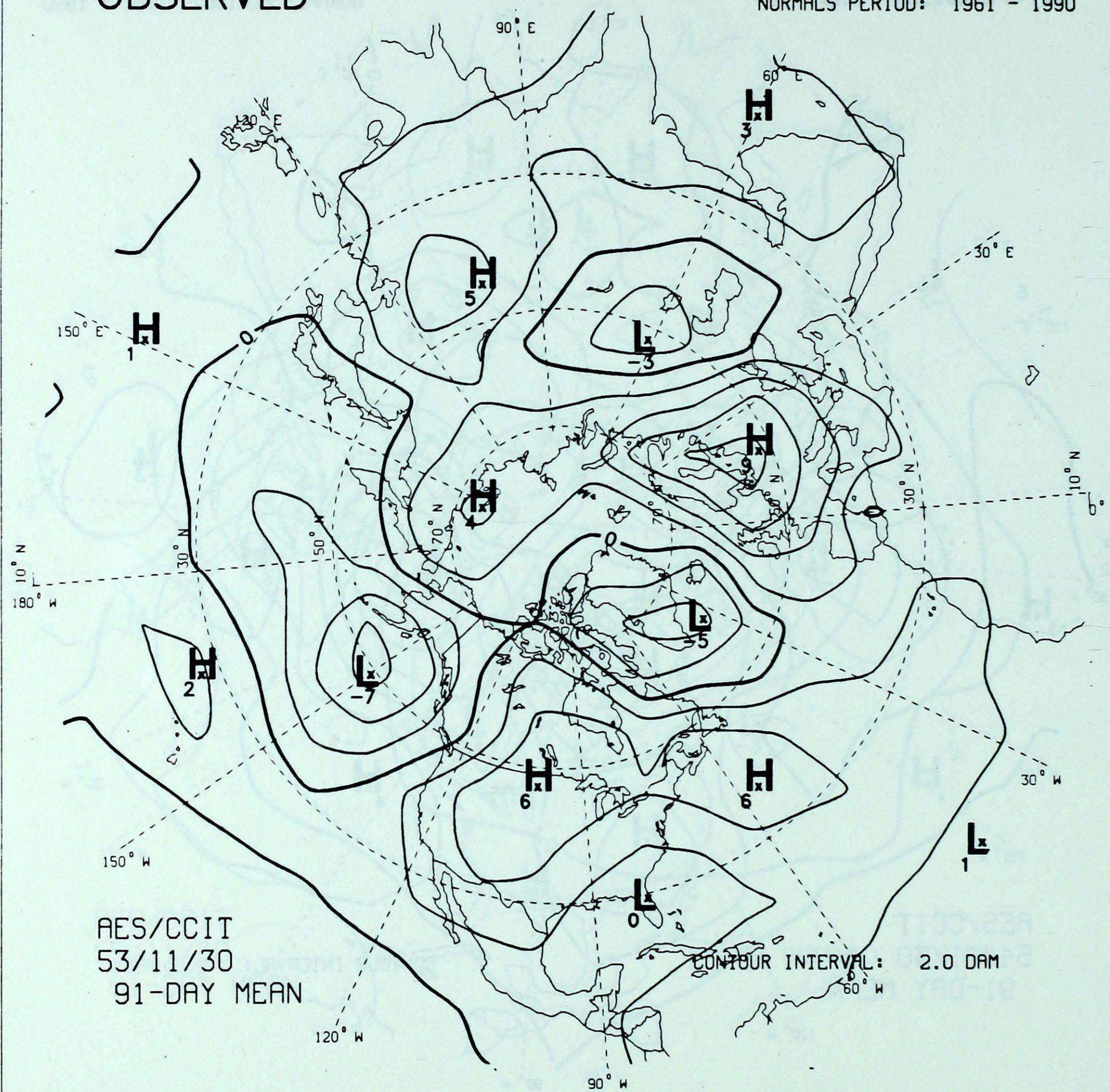
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 53 TO 30 NOV 53
91-DAY MEAN

OBSERVED

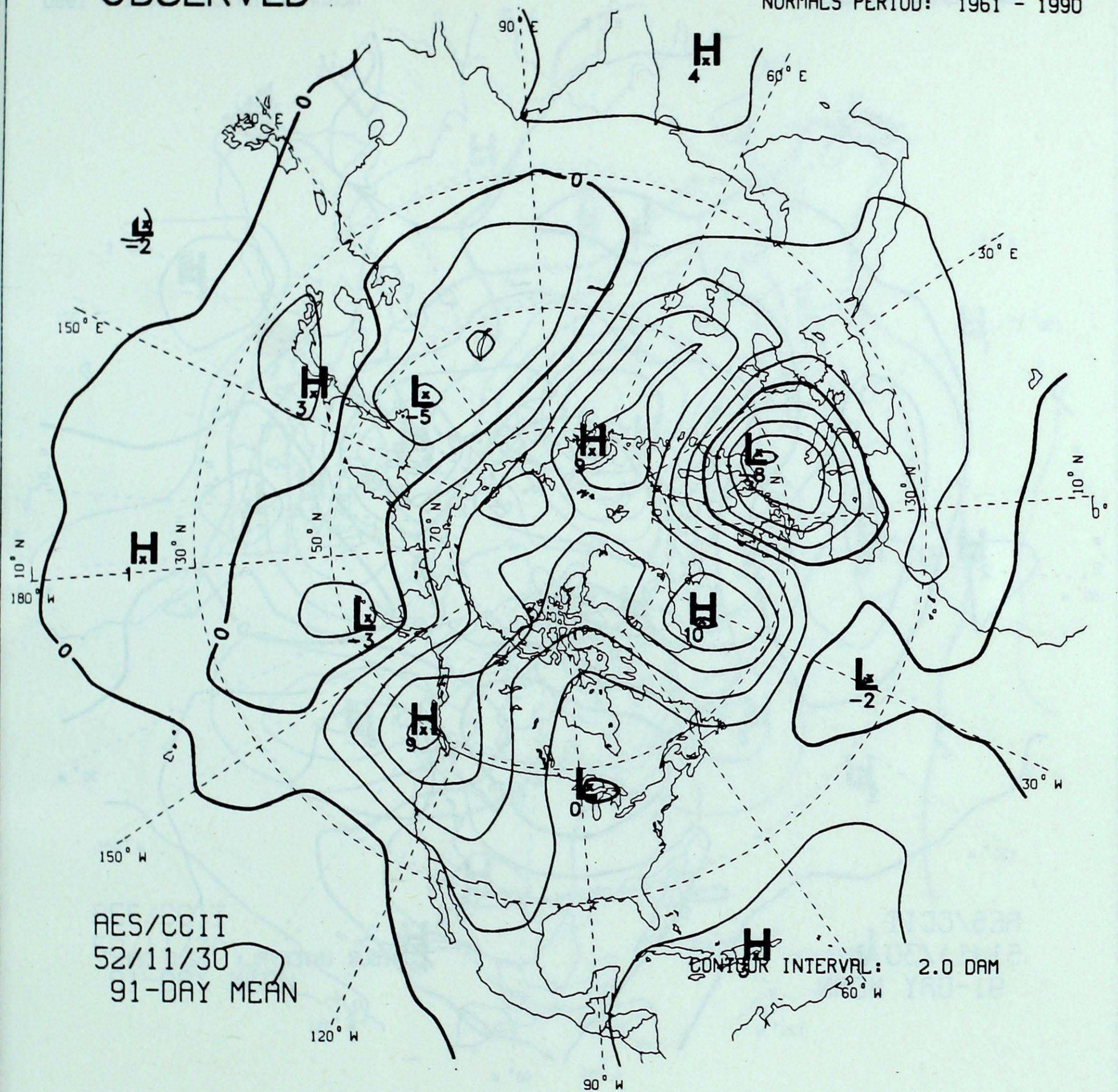
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 52 TO 30 NOV 52
91-DAY MEAN

OBSERVED

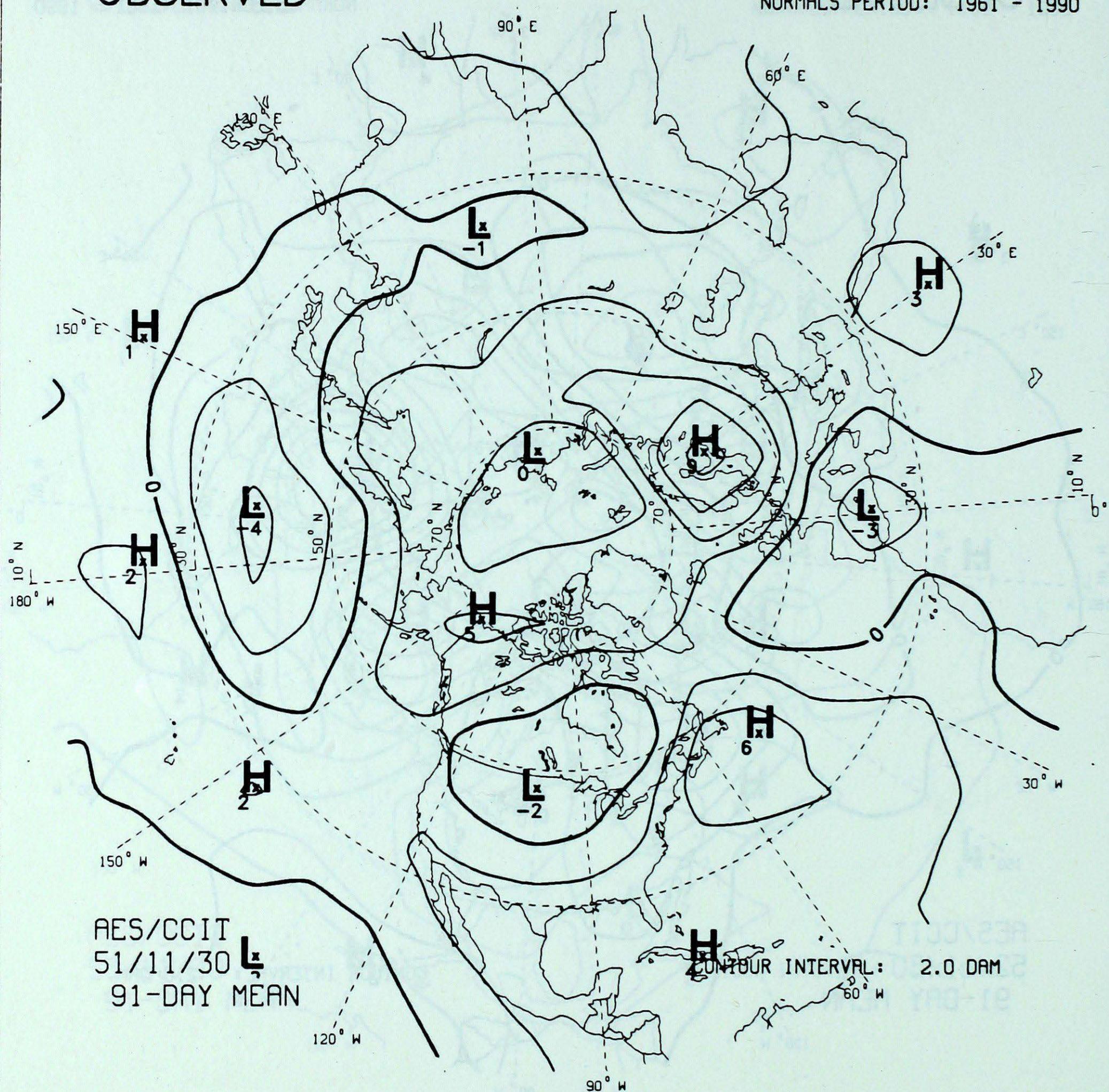
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 51 TO 30 NOV 51
91-DAY MEAN

OBSERVED

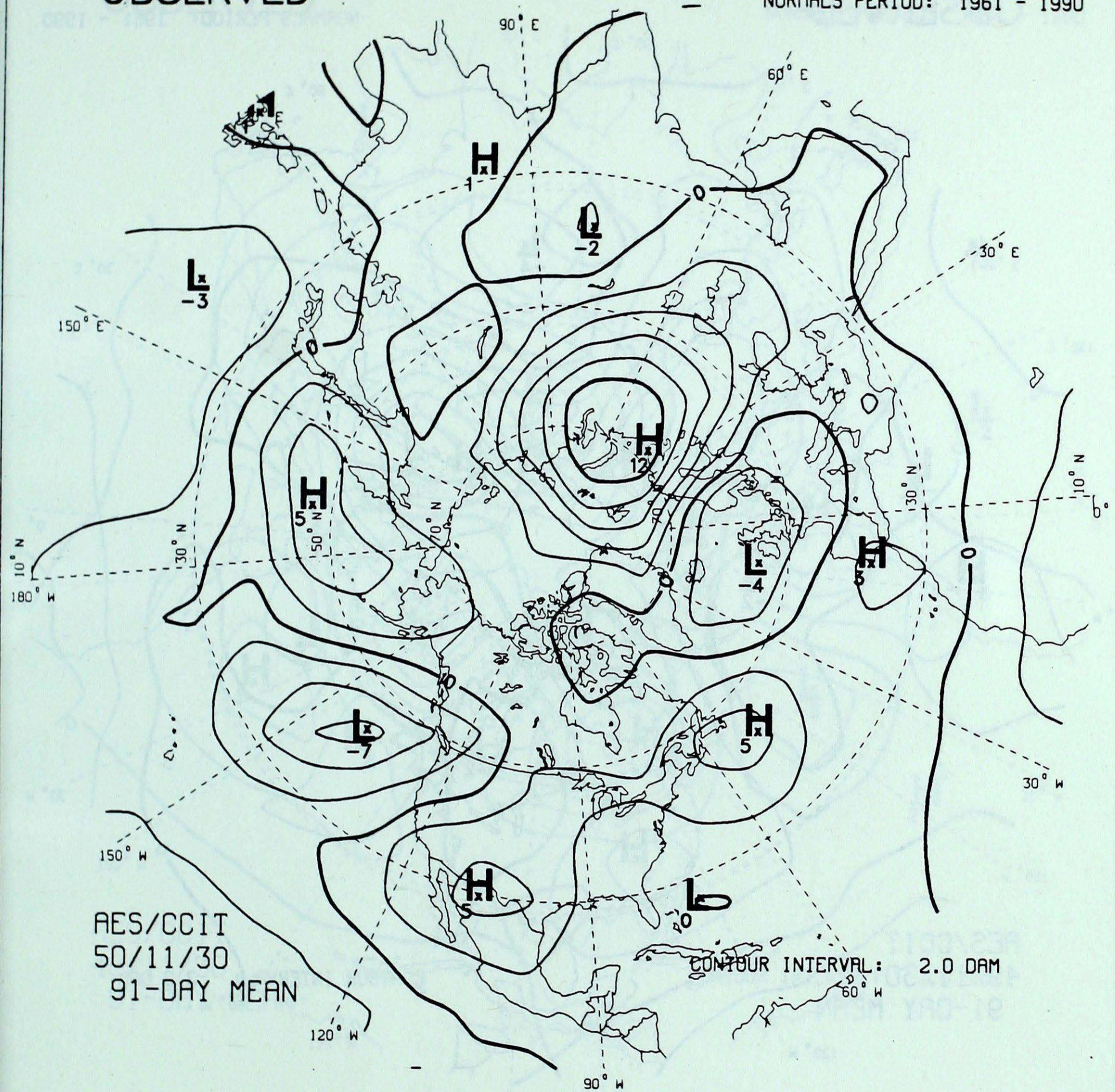
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 50 TO 30 NOV 50
91-DAY MEAN

OBSERVED

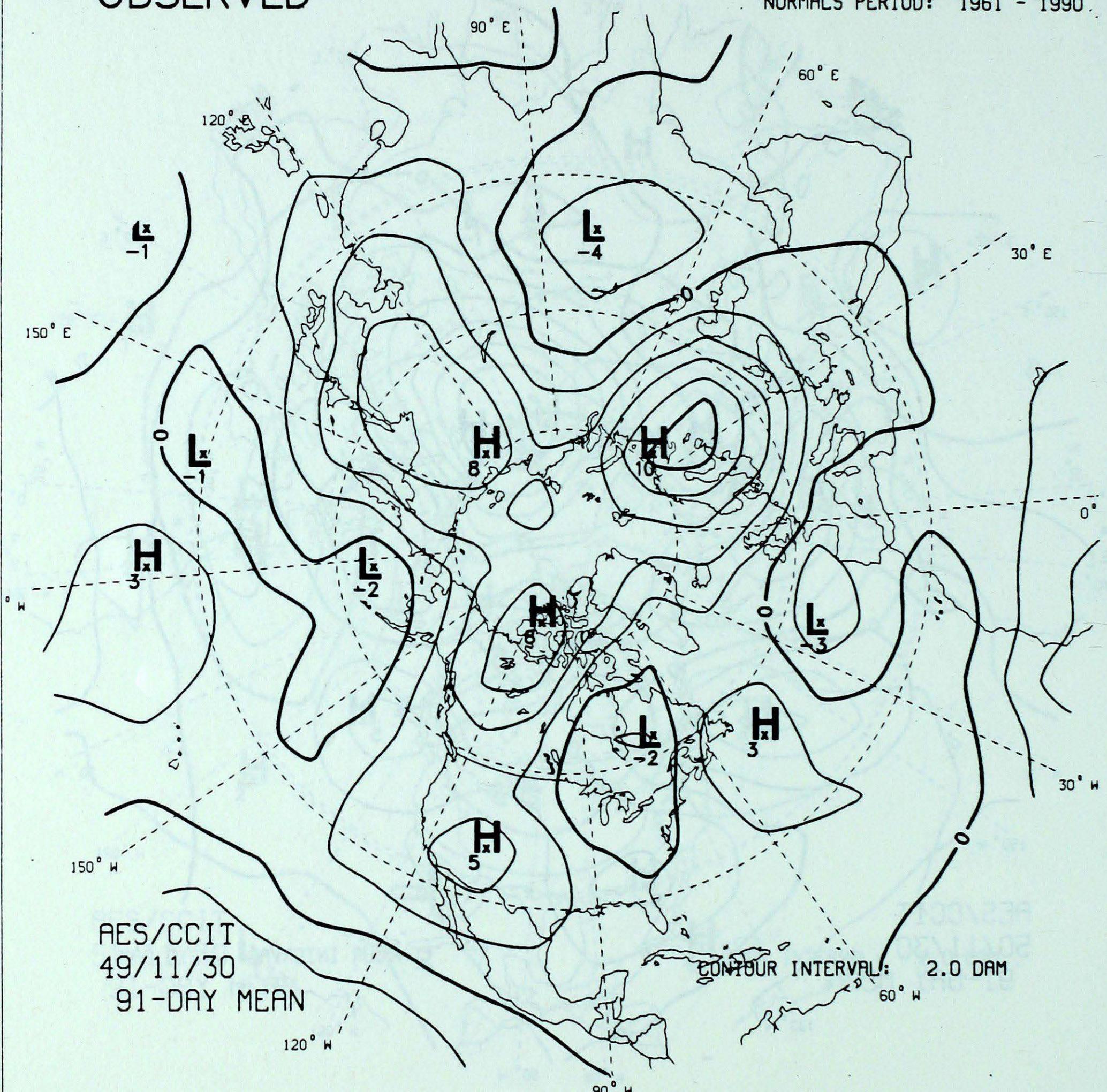
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 49 TO 30 NOV 49
91-DAY MEAN

OBSERVED

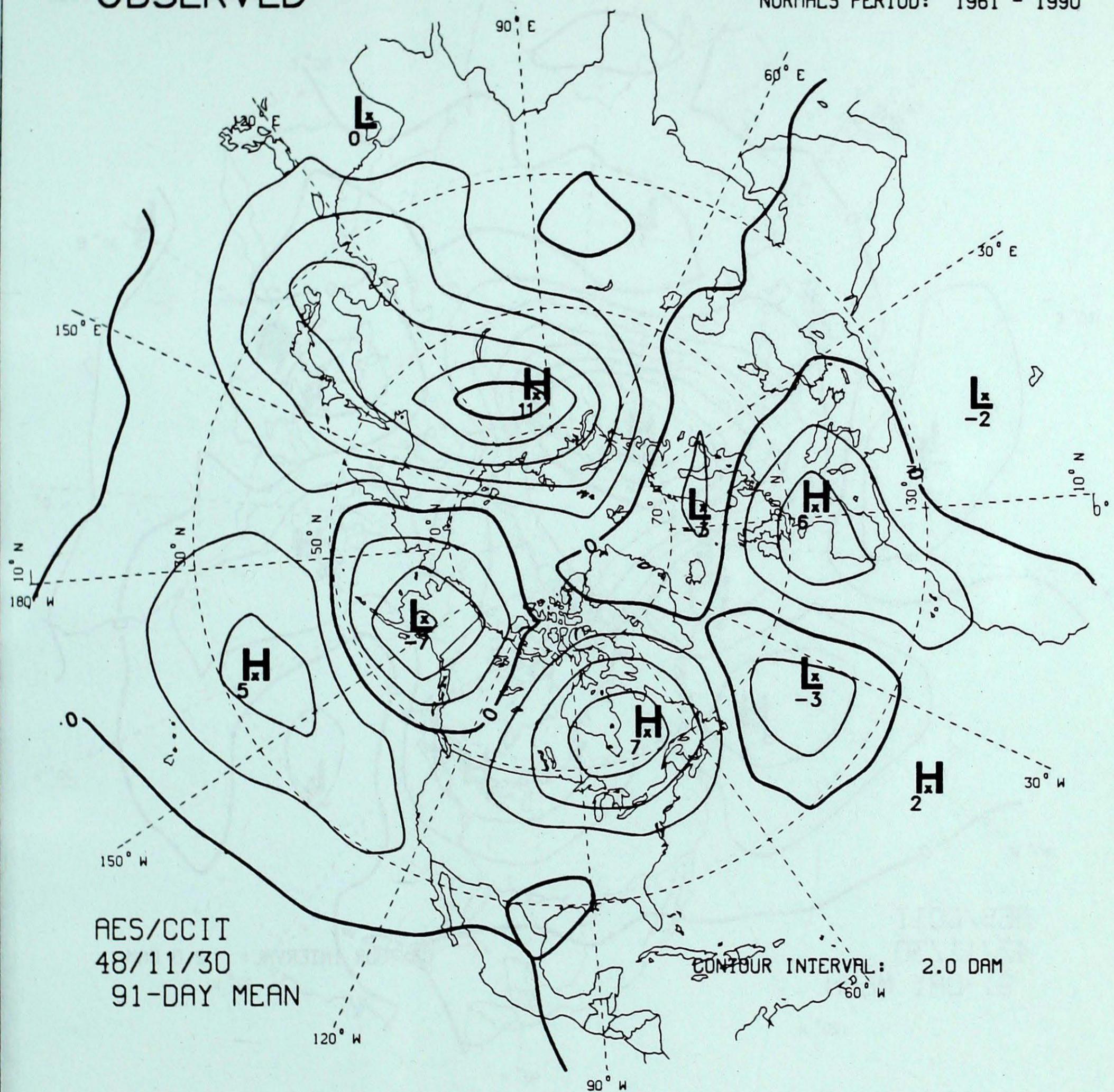
NORMALS PERIOD: 1961 - 1990



50 KPA HEIGHT ANOMALY
01 SEP 48 TO 30 NOV 48
91-DAY MEAN

OBSERVED

NORMALS PERIOD: 1961 - 1990



AES/CCIT
48/11/30
91-DAY MEAN

CONTOUR INTERVAL: 2.0 DAM

50 KPA HEIGHT ANOMALY
01 SEP 47 TO 30 NOV 47
91-DAY MEAN

OBSERVED

NORMALS PERIOD: 1961 - 1990

