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HAUS BOU 180407

FROM SPACE DISTURBANCE FORECAST CENTER BOULDER COLO

SDF NUMBER 814A ISSUED 0400Z 8 NOV 1970

A CLASS-X FLARE AND SEVERAL CLASS-M FLARES ARE EXPECTED DURING THE NEXT 13 HOURS.

A. SOLAR ACTIVITY DURING THE PAST 11 HOURS HAS CONSISTED PRIMARILY OF ENERGETIC EVENTS FROM THE N17W47 REGION. THESE EVENTS ARE SUMMARIZED AS FOLLOWS: X1 17/1759Z; M5 17/2010Z; M3 17/2138Z; M8 17/2255; X4 18/0204Z. THE LARGEST 10 CM RADIO BURST REPORTED WAS APPROXIMATELY 160 FLUX UNITS ABOVE THE BACKGROUND LEVEL AND ACCOMPANIED THE SUB-NORMAL FLARE AT 17/2010Z. ALL THE DATA PRESENTLY AVAILABLE SUGGEST THAT THE N17W47 REGION HAS REACHED ITS MAXIMUM STAGE OF DEVELOPMENT AND IS BEGINNING TO DECAY VERY SLOWLY. OTHER DISK REGIONS HAVE SHOWN ONLY RELATIVELY MINOR CHANGES. ATS-1 PROTON COUNTING RATES REMAIN AT BACKGROUND LEVELS, AND THE GEOMAGNETIC FIELD HAS BEEN UNUSUALLY QUIET DURING THE PAST 11 HOURS.

B. CONTINUED CLASS- AND CLASS-X FLARES ARE EXPECTED TO BE PRODUCED BY THE N17W47 REGION DURING THE FORECAST PERIOD. INFREQUENT SMALL CLASS-M FLARES ALSO MAY OCCUR AT N05E07, N16W12, AND S09W16. THE GEOMAGNETIC FIELD IS EXPECTED TO SHOW SOME DISTURBANCE AS A RESULT OF THE RECENT HIGH LEVEL OF FLARE ACTIVITY, BUT A MAJOR MAGNETIC STORM IS UNLIKELY. A SIGNIFICANT PROTON EVENT WITH PCA IS NOT EXPECTED, THOUGH MINOR ENHANCEMENTS MAY OCCUR AT SATELLITE SENSORS DURING THE FORECAST PERIOD.

C. FLARE AND PROTON EVENT PROBABILITIES FOR THE NEXT THREE 24 HOUR PERIODS BEGINNING 18 NOV/0400Z ENDING 21 NOV/0400Z.

CLASS M OR GREATER 99/99/99

CLASS X 65/60/50

PROTON EVENTS 20/15/10

D. OTTAWA 10.7 CM FLUXES FOR 17/1700Z AND 17/2000Z WERE 194 AND 183 RESPECTIVELY.

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HAUS BOU 181740

FROM SPACE DISTURBANCE FORECAST CENTER BOULDER COLO

SDF NUMBER 814B ISSUED 1700Z 18 NOV 1970

A CLASS-X FLARE AND SEVERAL CLASS-M FLARES ARE EXPECTED DURING THE NEXT 11 HOURS.

A. SINCE ABOUT 17/2000Z AND DURING THE FIRST 6 HOURS OF THE CURRENT GREENWICH DAY FOUR MORE M FLARES AND AN ADDITIONAL X EVENT WERE ADDED TO THE ALREADY IMPRESSIVE ENERGETIC FLARE LIST COMPILED BY THE N17W55 REGION. THE MOST RECENT OBSERVATIONS INDICATE THAT THE FREQUENCY OF ENERGETIC FLARES IS BEGINNING TO DECLINE. YESTERDAY'S CONFIGURATION IN WHITE LIGHT, H-ALPHA, AND 9.1CM MAY WELL HAVE MARKED THE INITIAL STAGES OF DECAY. AN SC OF THE ORDER OF 30 GAMMAS WAS OBSERVED ON THE D TRACE ABOUT 18/1227Z. IT EVIDENTLY REPRESENTS THE PASSAGE OF WHATEVER SECTOR STRUCTURE THE LARGE NW CENTER HAS GENERATED IN THE LAST 5 DAYS.

B. NO CHANGE IN TERMS OF EXPECTED DISK ACTIVITY OR GEOMAGNETIC EFFECTS FROM PREVIOUS MESSAGE.

C. FLARE AND PROTON EVENT PROBABILITIES FOR THE NEXT THREE 24 HOUR PERIODS BEGINNING 18 NOV/1700Z ENDING 21 NOV/1700Z.

CLASS M OR GREATER 100/100/100

CLASS X 90/90/90

PROTON EVENTS 10/15/25

D. OTTAWA 10.7 CM FLUX FOR 18/1400Z WAS 205. PREDICTED 10.7 CM FLUX FOR 19-21 NOV IS 184/179/183.

E. MAGNETIC A-FREDERICKSBURG FOR 17 NOV WAS 05. FOR 18 NOV ABOUT 14. PREDICTED AP FOR 19-21 NOV, 15/12/12.

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FROM SPACE DISTURBANCE FORECAST CENTER BOULDER COLO

SDFR 002 ISSUED 18 NOVEMBER 1970

HIGHLIGHTS FOR THE PERIOD 10-17 NOVEMBER 1970:

BOTH THE NUMBER AND INTENSITY OF FLARES ROSE SHARPLY DURING THE PERIOD AS A GROUP NEAR CARRINGTON 035 DEVELOPED TO AN AREA EXCEEDING 1700 MILLIONTHS OF THE DISK, I. E. AN AREA OF THE ORDER OF 5 TIMES THE EARTH'S SURFACE AREA. THIS ACTIVE CENTER-DESIGNATED MCMATH REGIONS 026,029- WAS APPARENTLY BORN ON THE DISK NEAR N16E65 ON 09 NOV. AFTER A 3-DAY PERIOD OF UNSPECTACULAR SPOT GROWTH, SUBSEQUENT DEVELOPMENT, ESPECIALLY BETWEEN ABOUT 13.5 AND 14.75 NOV, WAS EXPLOSIVE. IT IS NOT YET CLEAR WHETHER OR NOT TODAY'S CONFIGURATION MARKS A MAXIMUM IN 029'S EXTREMELY NONCLASSICAL EVOLUTION. RADIAL FIELD STRENGTHS AS MEASURED BY MT. WILSON OBSERVATORY ARE AS HIGH AS 2500 GAUSS AND OPPOSITE POLARITIES WITHIN THE LEADING AND CENTRAL PENUMBRAL STRUCTURES EXIST. IN WHITE LIGHT 029 HAS A LONGITUDINAL EXTENT OF ABOUT 16 DEGREES WHILE SPANNING NEARLY 10 DEGREES IN LATITUDE. APPROXIMATELY 32 M FLARES AND 6 X EVENTS HAVE BEEN OBSERVED SINCE THE 12TH FROM THIS SINGLE REGION. THE TWO MOST ENERGETIC ERUPTIONS WERE THE FOLLOWING: AN X9, START TIME 16/0045Z, OPTICALLY 2B, NEAR N15W20 AND AN X6, START TIME 16/1211Z, OPTICALLY 1B, NEAR N17W28. THE FORMER WAS ACCOMPANIED BY A 99M MAJOR CM RADIO BURST WITH A PEAK FLUX ABOVE BACKGROUND GREATER THAN 2700 WATTS/M2/HZ AT 10CM. ON 9.6 MHZ FADEOUT WAS COMPLETE BETWEEN 0050 AND 0149Z. ASSOCIATED DEKAMETER EMISSION RECORDED ON CULGOORA'S RADIO-HELIOGRAPH WAS DESCRIBED AS COMPLEX IN STRUCTURE AND INCLUDED SOME TYPE IV. NO ENERGETIC PARTICLES HAVE YET TO BE INTERCEPTED BY EARTH FROM ANY OF THE M OR X FLARES DESCRIBED IN THIS PUBLICATION. IN ADDITION AN INTENSE TYPE I RADIO NOISE STORM AT 184 MHZ AS WELL AS MODERATE DEKAMETRIC CONTINUUM FROM ABOUT 22 TO 80 MHZ ARE IN EVIDENCE. TWO OTHER REGIONS OF SIGNIFICANCE DEVELOPED DURING THIS PERIOD. ONE OF THESE HAS BEEN MCMATH NUMBER 037 (THE L343 PORTION) WHICH REPRESENTS THE APPARENT COMBINATION OF TWO EARLIER CLOSELY SPACED SPOT GROUPS. ITS CURRENT CLASS/AREA IS LISTED AS E/190. THE OTHER GROUP LIES IN THE SOUTHERN HEMISPHERE NEAR L003 (MCMATH 032) WITH AN AREA SLIGHTLY GREATER THAN 100 MILLIONTHS. THE FOUR PENUMBRAL STRUCTURES MAKING UP THIS BIPOLAR REGION ARE CLOSELY CONFINED IN LATITUDE. NEITHER 032 NOR 037 HAS MADE A SIGNIFICANT CONTRIBUTION TO OVERALL DISK ACTIVITY. THE FREDERICKSBURG A-INDEX EXCEEDED 10 ONLY DURING THE FIRST TWO DAYS OF THE 8-DAY PERIOD UNDER DISCUSSION. THESE SUBSTORM GEOMAGNETIC FIELD RESPONSES WERE DUE TO THE PASSAGE OF A SECTOR STRUCTURE RATHER THAN BEING DIRECTLY RELATED TO DISK ACTIVITY. NO SUDDEN MAGNETIC STORM ONSET HAS OCCURRED AS A RESULT OF THE WEEK'S IMPRESSIVE LIST OF ENERGETIC EVENTS.

FORECAST FOR THE PERIOD 19-25 NOVEMBER 1970:

A RESURGENCE OF ACTIVITY-NEAR OR ABOVE THE LEVEL WITNESSED ON 15 NOV-IS EXPECTED BY THE 20TH OR 21ST. NO PCA IS ANTICIPATED UNLESS AT LEAST A 3B FLARE OCCURS WITHIN 029. TO DATE ESCAPE OF ACCELERATED PARTICLES HAS EVIDENTLY BEEN SUPPRESSED BY THE REGION'S STRONG MAGNETIC FIELD. MOREOVER, A SIGNIFICANT DIMINUTION OF THE MAGNETIC FIELD BEFORE WEST LIMB PASSAGE ON 21 NOV IS NOT EXPECTED. ADDITIONAL MAJOR ERUPTIONS, WHICH ARE AS LIKELY ON THE DOWNSIDE AS ON THE UPSIDE OF SPOT GROUP EVOLUTION, SHOULD THEREFORE TAKE PLACE BEHIND THE WEST LIMB.

28-DAY FORECAST FOR THE PERIOD 19 NOVEMBER-17 DECEMBER 1970:
THE NEXT PULSE OF ACTIVITY IS EXPECTED DURING THE 2ND WEEK OF JANUARY.

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