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KMSC

HAUS BOU 280400

FROM SPACE DISTURBANCE FORECAST CENTER BOULDER COLO
SDF NUMBER 793A ISSUED 0400Z 28 OCTOBER 1970

ABOUT TWO M EVENTS SHOULD OCCUR DURING THE NEXT 13 HOURS.

A. ENERGETIC EVENTS REPORTED SINCE THE LAST MESSAGE INCLUDE THREE SMALL M FLARES IN ASSOCIATION WITH SE12 LIMB ACTIVITY. PEAK 1-8A FLUXES WERE 3.4, 1.3, AND 1.7 TIMES 10 TO THE MINUS TWO ERGS/CM²/SEC. X-RAY FLUXES EXCEEDED 10 TO THE MINUS TWO AGAIN BETWEEN 1409 AND 1417Z, BUT IT HAS BEEN DIFFICULT TO ASSIGN A SPECIFIC FLARING REGION SINCE (1) THERE WAS MORE THAN ONE POSITION REPORTED FLARING AT THE TIME AND (2) THE SOLRAD-9 ION CHAMBER BURST PROFILE EXHIBITED NO SHARP RISE. THE 5 SEPARATE REGIONS MAKING UP THE NE COMPLEX SPAN ABOUT 32 DEGREES IN LONGITUDE AND APPROX 11 DEGREES IN LATITUDE. MAGNETICALLY THREE DELTA CONFIGURATIONS ARE APPARENT SPECTROGRAPHICALLY AND DISTRIBUTED BETWEEN THE TWO EASTERNMOST FEATURES. THE REGION NEAREST THE EAST LIMB HAS THE MOST CONTORTED NEUTRAL LINE, I.E. THE LOCUS OF POINTS ON THE DISK WHERE THE MAGNETIC FIELD PARALLEL TO THE LINE-OF-SIGHT VANISHES, CONTAINS MANY KINKS AND OXBOWS. BRIGHT HYDROGEN PLAGE CONNECTS THE ENTIRE ARRAY. A TYPE I RADIO NOISE STORM CONTINUES TO WAX AND WANE AT 184MHZ (LAMBDA ABOUT 1.5M). ITS ORIGIN IS BELIEVED TO BE A FEW HUNDREDTHS OF A SOLAR RADIUS ABOVE WHAT MIGHT BE CALLED THE NE REGIONS RADIO CENTER OF MASS AT DECIMETER WAVELENGTHS. MOREOVER, AT 9.1 CM, BRIGHTNESS TEMPERATURE CONTOURS APPEAR ~~XX~~ TO HAVE CONTRACTED AND DECLINED SLIGHTLY IN INTENSITY.

B. IN TERMS OF DEVELOPMENT THE CLUSTER OF GROUPS IN THE NE QUADRANT MAY BE ON OR NEAR AN INFLECTION POINT. THE TREND FOR THE NEXT 3 DAYS IS NOT OBVIOUS, HOWEVER, AN ASSIMILATION OF SUCH CLASSIC AND NON-CLASSIC SOLAR INDICES AS THE NEAR 2-MONTH LULL IN ACTIVITY, THE QUASI-FAVORABLE CARRINGTON LONGITUDE, THE HIGH 10CM FLUX INTEGRATED OVER THE WHOLE DISK, AND THE ENHANCED 1-8 AND 3-20A X-RAY BACKGROUNDS, LEANS MORE TOWARD THE HIGH SIDE OF THE ACTIVITY SPECTRUM. ROUGHLY 6 TO 9 HOURS BEFORE 29/1200Z A SECTOR BOUNDARY SHOULD BEGIN TO SWEEP BY EARTH. THE 30TH SHOULD MARK THE MAXIMUM OF THIS SUBSTORM LEVEL DISTURBANCE.

C. FLARE AND PROTON EVENT PROBABILITIES FOR THE NEXT THREE 24 HOUR PERIODS BEGINNING 28 OCT/0400Z ENDING 31 OCT/0400Z
CLASS M OR GREATER 100/100/100

CLASS X 25/25/25

PROTON EVENTS 10/15/20

D. OTTAWA 10.7 CM FLUXES FOR 27/1700Z AND 27/2000Z WERE 194 AND 190 RESPECTIVELY.

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HAUS BOU 281705

FROM SPACE DISTURBANCE FORECAST CENTER BOULDER COLO

SDF NUMBER 793B ISSUED 1700Z 28 OCT 1970

CLASS M EVENTS ARE EXPECTED DURING THE NEXT 11 HOURS.

A. A SMALL BUT BRIGHT IMP 2B CLASS X4 FLARE OCCURRED AT N21E21.
AT 28/1248Z. THIS FLARE WAS INVOLVED IN THE DELTA CONFIGURATION
AND TIGHT GRADIENTS IN THE EASTERNMOST OF THE NE REGIONS. A MAJOR
RADIO BURST ACCCOMPANIED THE FLARE. PEAK FLUXES WERE 1550 FLUX
UNITS AT 1410 MHZ, 780 UNITS AT 2700 MHZ, AND 1200 UNITS AT
5000 MHZ. UHF AND VHF RADIO COMMUNICATIONS WERE SEVERLY DIS-
RUPTED FOR ABOUT 5 MINUTES DURING THIS RADIO BURST. INTENSITY
3 TYPE IV DEKAMETRIC EMISSION WAS ALSO REPORTED. FROM INITIAL
ANALYSIS THROUGH CLOUDS WE JUDGE THAT THIS FLARE HAS NOT ALTERED
THE POTENTIAL OF THE COMPLEX FOR FURTHER ENERGETIC ACTIVITY. THE
GEOMAGNETIC FIELD HAS BEEN RELATIVELY QUIET.

B. ENERGETIC ACTIVITY IS EXPECTED TO CONTINUE. ONE OR TWO
MAJOR EVENTS ARE LIKELY BEFORE THE NE COMPLEX CROSSES THE WEST
LIMB. A SATELLITE-LEVEL PROTON ENHANCEMENT IS EXPECTED TO
BEGIN 29-30 OCTOBER. A FLARE-INDUCED GEOMAGNETIC STORM EXPECTED
30-31 OCTOBER MAY MASK THE MAJOR PART OF THE SECTOR BOUNDARY TYPE
DISTURBANCE EXPECTED TO BEGIN ON 29 OCTOBER.

C. FLARE AND PROTON EVENT PROBABILITIES FOR THE NEXT THREE 24
HOUR PERIODS BEGINNING 28 OCT/1700Z ENDING 31 OCT/1700Z.

CLASS M OR GREATER 100/100/95

CLASS X 25/25/25

PROTON EVENTS 20/25/20

D. OTTAWA 10.7 CM FLUX FOR 28/1400Z WAS 199. PREDICTED
10.7 CM FLUX FOR 29-31 OCT IS 200/200/195.

E. MAGNETIC A-FREDERICKSBURG FOR 27 OCT WAS 04. FOR 28 OCT
ABOUT 09. PREDICTED AP FOR 29-31 OCT, 15/25/20.

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HAUS BOU 230000Z

SDFR 999 ISSUED 28 OCTOBER 1970

HIGHLIGHTS FOR THE PERIOD 21-27 OCTOBER 1970--

THE FIFTY-SIX DAY LULL IN SOLAR ACTIVITY ENDED ON 23 OCTOBER AS MCMATH REGION 002 (OLD REGION 965 AND CURRENTLY CENTERED NEAR N15E23, L243) CROSSED THE EAST LIMB. THE L240 LONGITUDE BELT IS ONE OF THE TWO HISTORICALLY ACTIVE BELTS; ITS LAST PERIOD OF SUSTAINED ACTIVITY WAS 12-17 AUGUST 1970. AS IT APPROACHED WEST LIMB ON ITS LAST ROTATION, THE REGION WAS CHARACTERIZED BY A SCATTERED PLAGE AND A SMALL SPOT GROUP WHICH WAS MAGNETICALLY BETA-GAMMA WITH REVERSED POLARITIES. THE REGION NOW CONTAINS AN EXTENSIVE PLAGE AND A COMPLEX SPOT STRUCTURE CONSISTING OF TWO SMALL AND DEVELOPING BIPOLE GROUPS AND THREE MODERATE-SIZED COMPLEX GROUPS -- ONE BETA-GAMMA OF CLASS/AREA D/290 MILLIONTHS NEAR N15E05, A D/310 NEAR N18E21 WITH TWO DELTA CONFIGURATIONS, AND A D/220 NEAR N23E29 WITH A DELTA CONFIGURATION AND HIGH FIELD GRADIENTS. TO DATE MOST OF THE ACTIVITY HAS BEEN ASSOCIATED WITH THE N18E21 SPOT GROUP. SINCE 23 OCTOBER THE REGION HAS PRODUCED NUMEROUS SMALL CLASS M EVENTS AND SEVEN FAIRLY LARGE EVENTS. THE DATE/TIME, OPTICAL IMPORTANCE, AND X-RAY CLASS OF THE LARGER EVENTS WERE AS FOLLOWS -- 23/2155Z, 1N, X1; 24/0450, 2N, X1; 25/1048, SN, M5; 26/0239, 1N, M5; 26/0413, 2N, M6; 26/1119, SN, M7; AND 26/1237, SN, M9. THESE EVENTS WERE ESSENTIALLY X-RAY EVENTS. MOST OF THE OPTICAL FLARES WERE RELATIVELY SMALL AND OF NORMAL BRIGHTNESS. THE ASSOCIATED RADIO BURSTS WERE ALL VERY SMALL. A CLASS M2 EVENT AT 26/1424Z WAS APPARENTLY ASSOCIATED WITH ACTIVITY ON THE EAST LIMB NEAR S12. THE PASSAGE OF A SECTOR BOUNDARY IN THE INTERPLANETARY MAGNETIC FIELD CAUSED A MINOR GEOMAGNETIC DISTURBANCE ON 22-24 OCTOBER. THE A-INDEX AT FREDERICKBURG WAS 22 ON 23 OCTOBER.

FORECAST FOR THE PERIOD 29 OCTOBER-04 NOVEMBER 1970--

ENERGETIC ACTIVITY IS EXPECTED TO CONTINUE FROM REGION 002. AN AVERAGE OF ABOUT THREE ENERGETIC EVENTS PER DAY CAN BE EXPECTED. SOME MEDIUM TO LARGE CLASS M EVENTS ARE EXPECTED, AND CLASS X AND PROTINMES ARE POSSIBLE. ACTIVITY ON THE EAST LIMB NEAR N17 AND S12 INDICATES THAT REGIONS NOW APPROACHING THE LIMB MAY CONTRIBUTE TO THE ACTIVITY. A MINOR GEOMAGNETIC DISTURBANCE IS EXPECTED ON 29-30 OCTOBER AS ANOTHER SECTOR BOUNDARY SWEEPS PAST THE EARTH.

28-DAY FORECAST FOR THE PERIOD 29 OCTOBER-26 NOVEMBER 1970--

SOLAR ACTIVITY IS EXPECTED TO BE ENHANCED UNTIL 06 NOVEMBER. WITH THE RESURGENCE OF ACTIVITY AT L240, CAUTION SHOULD BE DIRECTED TO THE RETURN OF THE OTHER ACTIVE LONGITUDE, L090, ON 04-06 NOVEMBER.

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