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FROM SPACE ENVIRONMENT SERVICES CENTER, BOULDER, COLORADO
SDF NUMBER 032A
JOINT USAF/NOAA REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY.
ISSUED 1300Z 01 FEB 1982.
IA. ANALYSIS OF SOLAR ACTIVE REGIONS AND ACTIVITY FROM
31/1200Z TO 01/1200Z:
SOLAR ACTIVITY HAS BEEN MODERATE FOR THE PAST 24 HOURS.
M-CLASS XRAY EVENTS OCCURRED IN REGION 3576 (S13E00), 3581
(N09W04), AND 3579 (N10E11). REGION 3576, THE SITE OF A
PROTON FLARE ON 30 JAN, REMAINS THE MOST IMPRESSIVE REGION
ON THE DISK. IT CONTINUES TO GROW IN WHITE LIGHT IN ITS
CENTRAL PORTION ALTHOUGH THE MAIN TRAILER SPOT IS FRAGMENTING.
REGION 3581, WHICH FURTHER ANALYSIS SHOWS TO BE A SEPARATE
BUT INTERACTING GROUP EAST OF 3573 (N10W13), IS ANOTHER
VERY MAGNETICALLY COMPLEX REGION (BETA-GAMMA-DELTA) WHICH IS
STILL GROWING RAPIDLY. IT HAS RECENTLY PRODUCED TWO M-CLASS
EVENTS INCLUDING AN M2/1B AT 0039Z. REGION 3579 HAS LOST
SOME MAGNETIC COMPLEXITY TODAY, BUT IT CONTINUES TO GROW AND
FLUCTUATE. REGION 3578 (S09W19) SHARES A NEUTRAL LINE WITH
3576, AND ITS FORTUNES ARE UNDOUBTEDLY TIED TO THAT EXTRA-
ORDINARY GROUP. FINALLY, REGION 3583 (S15E31) IS EXHIBITING
RAPID GROWTH AND CONTAINS AN ISOLATED POLE IN ITW WESTERN
PORTION. THIS REGION PRODUCED NUMEROUS SUBFLARES OVER THE
PAST 12 HOURS. NEW REGION 3589 (S55E72) IS NOT YET FULLY
INTO VIEW BUT IT HAS ALREADY PRODUCED A C5 RADIO-RICH SUBFLARE.
IB. SOLAR ACTIVITY FORECAST:
SOLAR ACTIVITY IS EXPECTED TO REMAIN MODERATE SINCE SIX
SEPARATE REGIONS ARE CAPABLE OF SIGNIFICANT ACTIVITY. MAJOR,
PROTON PRODUCING FLARES ARE POSSIBLE FROM REGION 3576 AND, TO A
LESSER EXTENT, REGION 3581.
II. GEOPHYSICAL SUMMARY AND FORECAST:
THE GEOMAGNETIC FIELD WAS AT UNSETTLED TO ACTIVE LEVELS UNTIL
1058Z WHEN A SUDDEN COMMENCEMENT OCCURRED. STORM CONDITIONS
ARE IN PROGRESS AND ARE EXPECTED TO CONTINUE FOR THE NEXT
24-48 HOURS WITH DECREASING ACTIVITY THEREAFTER. THIS
DISTURBANCE ORIGINATED WITH AN X1/3B FLARE ON 30 JAN WHICH
ALSO PRODUCED A PROTON EVENT WHICH IS STILL IN PROGRESS. THE
PROTON FLUX AT GREATER THAN 10 MEV ENERGIES MAXED AT 850
PARTICLES/CM2-SEC-STER NEAR 1630Z. A POLAR CAP ABSORPTION EVENT
BEGAN NEAR 1815Z AND CONTINUES IN PROGRESS. THE MAXIMUM
DAYTIME ABSORPTION OF 2.1 DB OCCURRED NEAR 1900Z. THE PCA
IS EXPECTED TO END THIS UT DAY WITH THE PROTON EVENT DROPPING
BELOW EVENT THRESHOLDS BY 03 FEB.
III. EVENT PROBABILITIES: 02 FEB - 04 FEB
CLASS M 90/90/90
CLASS X 20/20/20
ROTON 20/20/20
PCAF IN PROGRESS
IV. OTTAWA 10.7 FLUX
OBSERVED 31 JAN 298
ESTIMATED 01 FEB 290
PREDICTED 02-04 FEB 290/285/280
90 DAY MEAN 31 JAN 197
V. GEOMAGNETIC A INDICES
OBSERVED AFR 30 JAN 21 AP 31 JAN 26
ESTIMATED AFR 31 JAN 23 AFR/AP 01 FEB 32/40
PREDICTED AFR/AP 02-04 FEB 45/40 30/20 15/15
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FROM SPACE ENVIRONMENT SERVICES CENTER, BOULDER, COLORADO
SDF NUMBER 032
JOINT USAF/NOAA REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY.
ISSUED 2200Z 01 FEB 1982
IA. ANALYSIS OF SOLAR ACTIVE REGIONS AND ACTIVITY FROM
01/1200Z TO 01/2100Z:
SOLAR ACTIVITY HAS BEEN HIGH DURING THE PAST 9 HOURS. REGION
3576 (S12W10) PRODUCED AN X2/3B FLARE WHICH BEGAN AT 1359Z,
PEAKED AT APPROXIMATELY 1409Z AND EXPONETIALLY DECAYED TO
BACKGROUND LEVELS BY ABOUT 18Z. THIS EVENT APPARENTLY IN-
DUCED A SYMPATHETIC FLARE IN REGION 3578 (S08W30), SUGGESTING
STRONG COUPLING BETWEEN THE REGIONS. THE EVENT WAS ACCOM-
PANIED BY A SIGNIFICANT TYPE II BURST, BUT NO TYPE IV WAS
OBSERVED. HIGH FREQUENCY SHORT WAVE FADES UP TO 20 DB WERE
OBSERVED AT 22 MHZ BETWEEN 1402 AND 1458Z. HIGH ENERGY
(GREATER THAN 40 MEV) PROTON FLUXES AT GEOSYNCHRONOUS SAT-
ILLITE ALTITUDES HAVE BEEN SLOWLY RISING SINCE THE EVENT,
REACHING A PLATEAU OF ABOUT 12/SQCM/SEC/STER AT ABOUT 19Z.
PROTONS AT ENERGIES GREATER THAN 10 MEV HAVE REMAINED AT
HIGH LEVELS (APPROXIMATELY 200/SQCM/SEC/STER) OVER THE
PAST 24 HOURS. ABSORPTION IN THE POLAR REGIONS HAS BEEN
CLEARLY ABOVE NORMAL BACKGROUND LEVELS DURING THE DAY,
FINALLY EXCEEDING EVENT THRESHOLDS AT 2130Z.
IB. SOLAR ACTIVITY FORECAST:
SOLAR ACTIVITY IS EXPECTED TO REMAIN AT MODERATE TO HIGH
LEVELS OVER THE NEAR TERM. REGION 3576 IS STILL EXTREMELY
COMPLEX MAGNETICALLY WITH DELTA CONFIGURATIONS IN THE
LEADER, INTERMEDIATE AND TRAILING SPOTS. THE LARGE SPOT
COMPLEX NEAR CENTRAL MERIDIAN (N12W15) HAS MATURED SIG-
NIFICANTLY OVER THE PAST DAY AND ALSO HAS SEVERAL DELTAS.
BOTH OF THESE REGIONS CAN BE EXPECTED TO PRODUCE M EVENTS
OR LARGER ACCOMPANIED POSSIBLY BY PROTON EMISSIONS UNTIL
THEY ROTATE OFF THE VISIBLE DISK IN 6 DAYS.
II. GEOPHYSICAL SUMMARY AND FORECAST:
THE GEOMAGNETIC FIELD HAS BEEN AT MINOR STORM LEVELS DURING
MOST OF THE DAY. CONDITIONS ARE EXPECTED TO REMAIN AT THESE
LEVELS AS A CONSEQUENCE OF DISTURBED SOLAR CONDITIONS. A
SUDDEN COMMENCEMENT FROM THE 01/1409Z FEB X2 SOLAR FLARE
IS EXPECTED LATE ON THE 2ND OR EARLY ON THE 3RD OF FEB.
PCA WILL EXCEED EVENT THRESHOLDS DURING THE NIGHT IN THE
POLAR REGIONS AS A CONSEQUENCE OF THE ENHANCED PROTON FLUXES.
EVENT PROBABILITIES: 02 FEB - 04 FEB
CLASS M 90/90/90
CLASS X 20/20/20
PROTON 20/20/20
PCAF IN PROGRESS
IV. OTTAWA 10.7 FLUX
OBSERVED 01 FEB 301
PREDICTED 02-04 FEB 290/285/280
90 DAY MEAN 02 FEB 198
V. GEOMAGNETIC A INDICES
OBSERVED AFR/AP 31 JAN 24/26
ESTIMATED AFR/AP 01 FEB 35/40
PREDICTED AFR/AP 02-04 FEB 45/40 40/40 15/20
SOLTERWARN
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