

FROM SPACE ENVIRONMENT SERVICES CENTER, BOULDER, COLORADO
SDF NUMBER 077

JOINT USAF/NOAA REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY.
ISSUED 2200Z 18 MAR 1989

IA. ANALYSIS OF SOLAR ACTIVE REGIONS AND ACTIVITY FROM 17/2100Z
TO 18/2100Z: SOLAR ACTIVITY WAS MODERATE. REGION 5395 (N34W78)
PRODUCED M-CLASS FLARES AS IT APPROACHED WEST LIMB. THEY WERE:
M2/0F AT 17/2316, M4/0F AT 1758, AND IN CONJUNCTION WITH REGION
5403 (S13W03), AN M3/0F TENFLARE AT 2035Z. TYPE IV SWEEP WAS
RECORDED ALONG WITH THIS LAST EVENT. ELSEWHERE, LOOPS AND BRIGHT
SURGING WERE SEEN NEAR S28 AT EAST LIMB WHERE A NEW REGION MAY
BE ABOUT TO APPEAR.

IB. SOLAR ACTIVITY FORECAST: SOLAR ACTIVITY IS EXPECTED TO BE
HIGH THE NEXT 48 HOURS AND MODERATE THEREAFTER. REGION 5395 IS
NOW MORE DIFFICULT TO ANALYZE BUT, GIVEN ITS TRACK RECORD, MUST
STILL BE CONSIDERED A POTENTIAL X-CLASS PRODUCER. ALSO, M-CLASS
ACTIVITY MAY OCCUR IN REGION 5403 AS WELL AS THE GROUP NOW
PERCHED ON THE SOUTHEAST LIMB.

IIA. GEOPHYSICAL ACTIVITY SUMMARY FROM 17/2100Z TO 18/2100Z:
THE GEOMAGNETIC FIELD WAS PREDOMINANTLY QUIET TO UNSETTLED
THE FIRST PART OF THE INTERVAL. ACTIVE TO MAJOR STORM
CONDITIONS HAVE BEEN OBSERVED LATELY, PROBABLY RELATED TO
RECENT FLARE ACTIVITY. THE 10 MEV PROTON EVENT CONTINUES
WITH THE MAXIMUM FLUX TO DATE 2,000 PFU AT 0920Z. THE POLAR
CAP ABSORPTION ALSO CONTINUES.

IIB. GEOPHYSICAL ACTIVITY FORECAST: THE GEOMAGNETIC FIELD IS
EXPECTED TO BE AT MINOR TO MAJOR STORM LEVELS EARLY DUE TO
THE EFFECTS OF THE X6/3B FLARE ON 17 MARCH. THE DISTURBANCE
SHOULD WEAKEN AT MID-PERIOD AND GIVE WAY TO UNSETTLED TO
ACTIVE CONDITIONS ON 21 MARCH.

III. EVENT PROBABILITIES 19 MAR-21 MAR

CLASS M 99/99/75

CLASS X 80/80/40

PROTON 50/50/25

PCAF IN PROGRESS

IV. OTTAWA 10.7 CM FLUX

OBSERVED 18 MAR 237

PREDICTED 19 MAR-21 MAR 230/215/210

90 DAY MEAN 18 MAR 228

V. GEOMAGNETIC A INDICES

OBSERVED AFR/AP 17 MAR 021/036

ESTIMATED AFR/AP 18 MAR 018/025

PREDICTED AFR/AP 19 MAR-21 MAR 040/065-020/045-015/025