

HFUS3 BOU 242200

FROM SPACE ENVIRONMENT SERVICES CENTER, BOULDER, COLORADO
SDF NUMBER 114

JOINT USAF/NOAA REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY.

ISSUED 2200Z 24 APR 1985

IA. ANALYSIS OF SOLAR ACTIVE REGIONS AND ACTIVITY FROM 23/2100 TO 24/2100Z: SOLAR ACTIVITY HAS BEEN VERY HIGH. THE LARGEST EVENT WAS A X1/3B FLARE FROM REGION 4647 (N04E17) WITH XRAY MAXIMUM TIME OF 24/0935Z. NUMEROUS LARGE DISCRETE FREQUENCY BURSTS, INCLUDING A TENFLARE (2695 MHZ) BURST WITH 4700 SFU AT 0931Z AND 8800 MHZ BURST WITH 14000 SFU AT 0929Z, ACCOMPANIED THIS FLARE. AN IMPORTANCE 1 TYPE IV RADIO SWEEP AND AN IMPORTANCE 3 SHORT WAVE FADE WERE REPORTED AT 24/0926Z AND AT 24/0925Z. THIS REGION ALSO PRODUCED SEVERAL C LEVEL EVENTS THIS PERIOD. REGION 4647 REMAINS AN EKI REGION WITH A WHITE LIGHT AREA OF APPROX 900 MILLIONTHS OF THE DISK. MAGNETICALLY IT IS A BETA-GAMMA-DELTA GROUP WITH DELTAS IN BOTH THE LEADER AND TRAILER PENUMBRAS. ITS MAGNETIC GRADIENT HAS INCREASED SIGNIFICANTLY SINCE YESTERDAY AND IS NOW APPROX .80 GAMMAS/KM. THE ONLY OTHER SPOTTED REGION ON THE DISK IS REGION 4646 (S09W20) WHICH IS A SMALL AXB TYPE GROUP.

IB. SOLAR ACTIVITY FORECAST: SOLAR ACTIVITY IS EXPECTED TO BE HIGH TO MODERATE THIS PERIOD. THE LARGE GRADIENT IN REGION 4647 INDICATES THAT IT IS STILL CAVABLE OF PRODUCING XRAY X CLASS ACTIVITY.

IIA. GEOPHYSICAL ACTIVITY SUMMARY FROM 23/2100Z TO 24/2100Z: THE GEOMAGNETIC FIELD WAS ACTIVE AT MID LATITUDES, AND GENERALLY ACTIVE WITH SOME MAJOR STORM LEVELS AT HIGH LATITUDES. A PROTON EVENT (GREATER THAN OR EQUAL TO 10 PARTICLES/CM²/SEC/STER AT GREATER THAN 10 MEV) WAS DETECTED AT GEOSYNCHRONOUS ALTITUDES AT 24/1430Z. THE MAXIMUM SO FAR IN THIS EVENT IS 16 PARTICLES/CM²/SEC/STER AT GREATER THAN 10 MEV AT 24/2100Z.

IIB. GEOPHYSICAL ACTIVITY FORECAST: THE GEOMAGNETIC FIELD IS EXPECTED TO START THE FORECAST PERIOD AT ACTIVE CONDITIONS. A MAJOR GEOMAGNETIC STORM IS EXPECTED TO BEGIN BY THE 26TH IN RESPONSE TO THE X1/3B FLARE FROM REGION 4647. THE FIELD IS THEN EXPECTED TO RETURN TO MINOR STORM LEVELS ON THE 27TH.

III. EVENT PROBABILITIES 25 APR-27 APR

CLASS M 90/90/90

CLASS X 50/25/25

PROTON 30/15/15

PCAF YELLOW

IV. OTTAWA 10.7 CM FLUX

OBSERVED 24 APR 090

PREDICTED 25 APR-27 APR 095/093/090

90 DAY MEAN 24 APR 073

V. GEOMAGNETIC A INDICES

OBSERVED AFR/AP 23 APR 015/017

ESTIMATED AFR/AP 24 APR 019/025

PREDICTED AFR/AP 25 APR-27 APR 020/020-050/050-030/030

SOLTERWARN

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