

HFUS 1 BOU 192200

FROM SPACE ENVIRONMENT SERVICES CENTER BOULDER COLO
SDF NUMBER 231

JOINT USAF/NOAA PRIMARY REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY
ISSUED 2200Z 19 AUGUST 1979

IA. SOLAR ACTIVITY HAS BEEN MODERATE DURING THE PAST 24 HOURS. A SLOW-RISING M1 X-RAY BURST (SIGNATURE CHARACTERISTIC OF BEHIND-THE-LIMB FLARING) OCCURRED WITH A MAXIMUM AT 19/1315Z. THIS WAS THE LARGEST X-RAY EVENT OF THE DAY AND WAS MOST LIKELY DUE TO A REGION, OR REGIONS, STILL DUE TO APPEAR AT THE EAST LIMB. THE LEADING PART OF REGION 1943 (N05E79) HAS PUSHED OVER THE LIMB. THIS REGION IS THOUGHT TO HAVE PRODUCED THE X6 BURST YESTERDAY. WHAT CAN BE SEEN OF THIS NEW REGION LOOKS VERY THREATENING. ON THE DISK, REGION 1929 (S26W00) HAS GROWN MORE COMPLEX AND IS NOW A BETA-GAMMA-DELTA REGION. THIS REGION HAS PRODUCED HALF A DOZEN SMALL C-CLASS SUBFLARES IN THE PAST 24 HOURS, BUT ONLY MINOR X-RAY RESPONSES HAVE BEEN NOTED ACCOMPANYING THESE OPTICAL EVENTS. THE NUMBER OF SPOTTED REGIONS SEEN ON THE DISK HAS NEARLY TRIPLED SINCE YESTERDAY.

IB. SOLAR ACTIVITY IS EXPECTED TO BE MODERATE TO HIGH DURING THE NEXT 24 HOURS. ENERGETIC ACTIVITY IS MOST LIKELY TO COME FROM REGION 1943 AND ANY AS YET UNSEEN REGIONS THAT ARE INTERACTING WITH IT. X6 EVENTS DON'T USUALLY OCCUR ON A DAILY BASIS, BUT A PATHOLOGICAL REGION CAN BE EXPECTED TO PRODUCE MAJOR FLARES EVERY THREE OR FOUR DAYS. THE OTHER REGIONS ON THE DISK DO NOT HOLD THE PROMISE OF MORE THAN ISOLATED M-CLASS FLARES.

II. THE GEOMAGNETIC FIELD BECAME ACTIVE DURING THE PAST 24 HOURS, PROBABLY DUE TO THE ARRIVAL OF LOW ENERGY PLASMA AT THE EARTH FROM M-CLASS FLARES IN REGION 1929 LAST WEEK. THE GEOMAGNETIC FIELD IS EXPECTED TO BE AT ACTIVE TO MINOR STORM LEVELS FOR THE NEXT 24 HOURS, WITH ACTIVITY DIMINISHING SLOWLY AFTER THAT. SMALL FLUXES OF GREATER THAN 10 MEV PROTONS ARE BEING OBSERVED ON SATELLITE SENSORS. THESE PARTICLES ARE APPARENTLY DUE TO THE MAJOR EAST LIMB EVENT SEEN YESTERDAY. FLUXES ARE CLIMBING SLOWLY (AND STEADILY) AND EVENT THRESHOLDS (10 PARTICLES/CM²/SEC/STER) WERE EXCEEDED EARLIER TODAY. AT FORECAST TIME SATELLITE SENSORS SHOWED 62 PARTICLES/CM²/SEC/STER. THE EVENT IS EXPECTED TO REACH A MAXIMUM OF 1000 PARTICLES/CM²/SEC/STER IN ABOUT 24 HOURS TIME. 4

III. EVENT PROBABILITIES 20 AUGUST - 22 AUGUST

CLASS M 80/80/80

CLASS X 30/30/30

PROTON 05/15/25

PCAF RED

IV. OTTAWA 10.7 CM FLUX

OBSERVED 19 AUGUST 182

PREDICTED 20-22 AUGUST 188/194/200

90-DAY MEAN 19 AUGUST 168

V. GEOMAGNETIC A INDICES

OBSERVED FREDERICKSBURG 18 AUGUST 08

ESTIMATED AFR/AP 19 AUGUST 24/30

PREDICTED AFR/AP 20-22 AUGUST 28/35 - 19/25 - 15/20

SOLTERWARN

BT