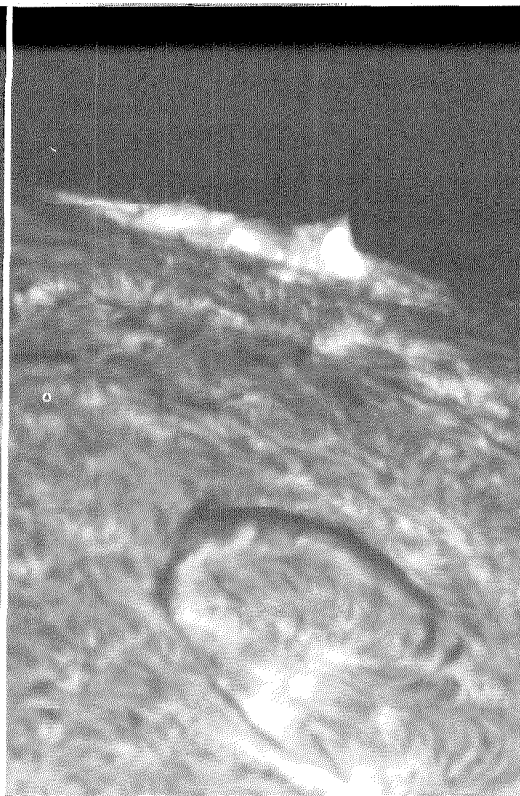
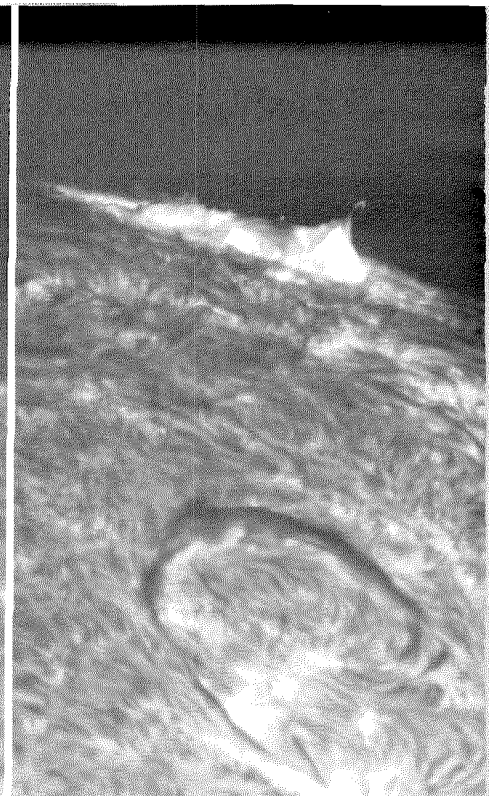


22:44:40



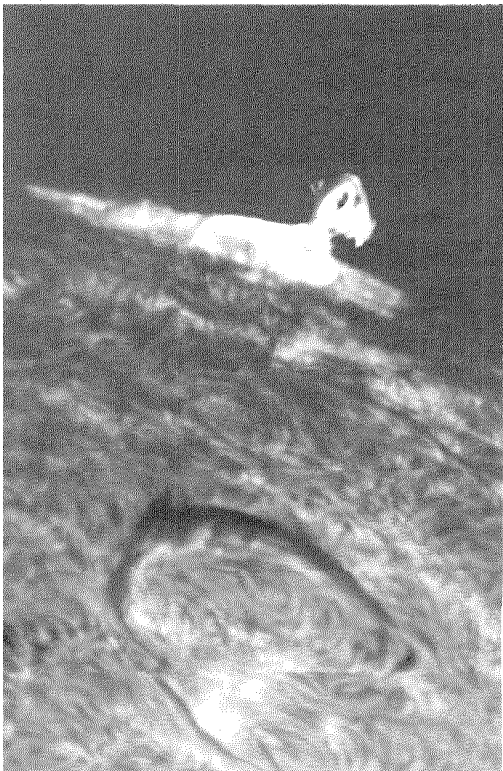
23:34:24



23:35:23

SOLAR FLARE

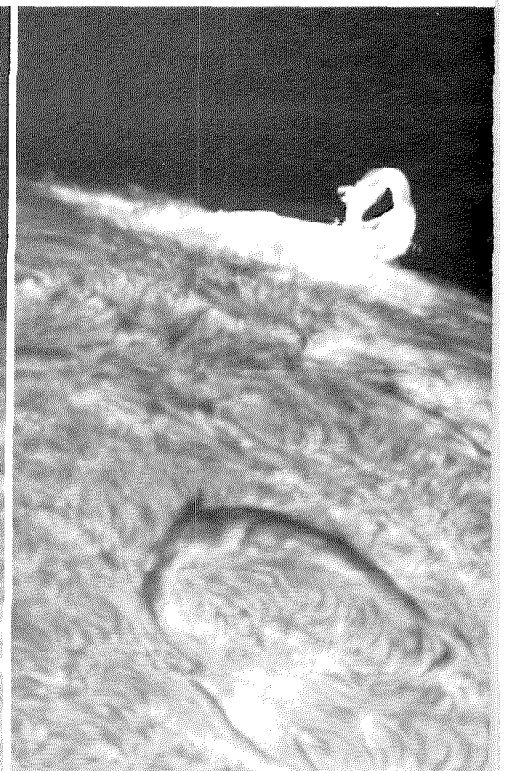
23:39:22



23:40:32

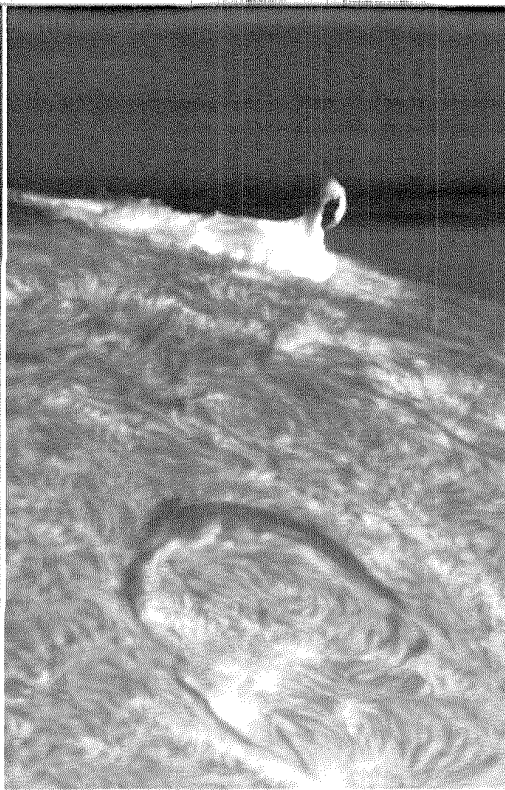


23:41:02





23:36:52



23:37:22



23:38:22

These spectacular photographs, taken at Caltech's solar observatory on Big Bear Lake, record a particularly impressive solar flare on the surface of the sun on July 9, 1974. Although this is not a large flare, the fact that we see it at the edge of the sun gives us a better understanding of the role of magnetic fields. The first frame, at 22:44:40 universal time, shows the preflare state. In this photograph in hydrogen alpha light we know the bright area is a region of high magnetic field

and enhanced activity. The flare begins as a bright blob at 23:34:24. As magnetic fields reconnect and the magnetic stresses are relieved, a twisted magnetic loop filled with hot plasma rises from the surface. As it rises further we see that there are many fine loops making up the large one. Finally the loops break up. The temperature in this flare, measured by soft x-rays, is about 20 million degrees. The hole inside the loop is about twice the size of the earth.

23:42:12



23:44:12



23:46:12

