



Close up (3) shows a large group of sunspots directly overhead causing the flare. Two days later (4) the spots



changed and broke into parts proving activity, through cameras with special filters attached to telescopes.

WHAT'S NEW ON THE SUN?

by Richard A. Miller, SJ

EVERY eleven years, there is a maximum activity of the sun. This year is one of those years and there are indications that the world is experiencing a maximum of maximums.

This is lucky for the International Geophysical Year because mountains of geophysical facts can be gathered about the sun when it is highly active.

In the Philippines, we are specially interested because we can keep an eye on the sun while the rest of the world is closed off by darkness.

Just what is solar activity? Extraordinary markings now daily appear on the sun's surface. Because the sun is so bright, very seldom can a

person look into the sky and see what is going on over the sun's face. This requires cameras with special filters attached to telescopes. Some filters are used to cut down the intensity of the sun's rays. Other filters choose certain wave lengths among the rays.

The sun, solid as it appears, is not solid, nor is it even cool enough for the boiling of metals. It is gaseous right down to the core. However the sun is quite substantial. It weighs twice a **billion, billion, billion** metric tons. The sun is full of electricity and magnetism. It is a nuclear pile which has been converting hydrogen to helium for about three or four billion years. All this

energy, coupled with the rotation of the sun, pushes the gases in certain regions around in great whirls. These whirls start on the inside of the sun and work their way to the surface. The whirls produce a magnetic field. This magnetized region restricts the flow of hot gases through itself. Consequently it cools. These magnetized regions look black on the sun's surface, because they are cool, relative to the rest of the sun. Actually, they are very hot; in fact, their temperature is over 8,000 degrees Fahrenheit. Another reason why these spots are cool, relative to the rest of the sun, is because their magnetism exerts a

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