

By: ~~Carla~~ ~~2008~~ ~~Cache~~, Science News Editor

Weird Sunspots Appear on the Sun's Surface

23rd Solar Cycle may not be over

The 24th Solar Cycle is believed to have begun a few weeks ago with the appearance of the first sunspot on the surface of the Sun, however the solar activity was relatively calm until now. This week, European Space Agency's Solar and Heliospheric Observatory detected a group of three sunspots which have appeared recently and seem to evolve at a rapid speed. Additional measurements with SOHO revealed something even more interesting in the sudden appearance of these new sunspots. Usually, sunspots form in cool regions of the solar surface when increased magnetic activity is experienced. Twisted magnetic fields on the Sun snap and produce flares of radiation accompanied by mass ejection in the form of charged elementary particles. These solar flares traveling through space, thus towards Earth as well, have enough force to disrupt the correct operation of artificial satellites and, if powerful enough, they can even disable electric power lines on the surface of the planet. The peak of the 23rd Solar Cycle was reached during the years 2001 and 2002, and occurs every 11 years or so. It is extremely hard to predict exactly when the next Solar Cycle will begin or when it will reach its peak. For example, we now believe that the current Solar Cycle began somewhere in 2006, but it could have taken place in 2007 just as well, or even later. The new sunspots discovered by SOHO seem to have a magnetic polarity identical to that of the 23rd Solar Cycle, basically meaning that the 24th solar cycle has yet to begin and we have much to learn before we can make accurate predictions on the solar weather. On Tuesday, a sunspot designated No. 989 ejected a moderate solar flare into space and there is a 50-50 chance that another will occur today as well. Aurora Borealis is determined by solar storms, however NOAA forecasters say that there will be no increased aurora activity during this week. Some solar weather forecasters already fear that the next Solar Cycle will be more intense than the last one. If this is true, then the effect on telecommunications, air traffic, power grids and GPS system will be noticeable, said NASA in December last year.