

ASTRONOMY

New solar cycle portends bright lights, possible perils

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A new cycle has just begun. I'm not talking about a new year, but a new solar cycle. Every 11 years, the sun's magnetic field reverses direction, marking the start of a new cycle of sunspot activity. Cycle 24 officially began on Jan. 4.



Why care about sunspot activity? Some people have suggested that sunspot activity can affect the weather, although the evidence is quite weak. One economist even suggested that a sunspot cycle gives rise to booms and busts in business, but it's hard to take that seriously.

Sunspot activity is, however, important to our astronauts. Coronal flares, which are intense outbursts of high-energy particles streaming from the sun, are often associated with groupings of sunspots. If astronauts were caught outside the space station during one of these flares, the radiation could be fatal.

But coronal flares have a nice side, too. The aurora borealis, or northern lights, is caused when high-energy particles hit the upper atmosphere. Earth's thick atmosphere protects us against radiation.

Sunspot activity is lowest at the beginning of a cycle. So right now, our astronauts are relatively safe. But will the height of the next cycle be worse than the last one? To answer this question, scientists have started to gather more data from the sun.

On Jan. 14, NASA's Ulysses probe flew over the northern pole of the sun, a key region of solar activity. According to Ed Smith, Ulysses' project director, magnetic fields at the sun's poles "open up,"

allowing the sun's atmosphere to escape at a million miles per hour.

We need to know more about the sun's magnetic field in order to understand why sunspots happen. There's more to the sun than meets the eye.

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