Let's Look at the Sun

Posted by admin on May 18, 2013

We on earth are vulnerable to the sun's vagaries. While the sun sustains life, a solar hiccup can have undeniable impact. Lately a single sunspot group has been crazy active as it drifts across the sun's surface. On May 13-15, 2013, four monstrous X-Class flares burst forth from a single region, when a lone such event would usually be news unto itself. This recent activity wasn't just a solar hiccup--it was more like projectile vomiting. If earth were downstream of such effluence, the consequences could be significant.

A first glance at today's sun would suggest the big sunspot is the culprit for the recent X-Class flares. Instead, the more disjointed sunspot group, labeled AR1748, is the source of all the woe. It's possible one of the recent solar flares was even responsible for ripping the tail off Comet Lemmon--a "disconnection event".
It behooves us to be familiar with the sun. If we observe the sun now during interludes of quiescence, we will recognize and respect subsequent anomalies. Sure, NASA and the astronomy community are on top of their game with incredible tools for tracking solar activity, like the Solar Dynamics Observatory and others. But we regular folks can also be attuned to the sun and view it with the vague familiarity of seeing the moon. I propose we as a community look at the sun together--safely, of course. There is no reason we should be blindsided (or blinded) by solar outbursts...

Yet while we're looking at one thing, nature can trip us up with its own surprises. For example, on February 15, 2013, astronomers were touting the near passing of an asteroid within the boundary of our fleet of geosynchronous satellites as the giant boulder raced from south to north. Suddenly, a random yet large meteorite traveling from north to south smashed headlong into the atmosphere above Chelyabinsk, Russia, releasing an explosive force. Surprise!

Later this year, the sungrazing Comet ISON (C/2012 S1 ISON) will dive deep into the heart of the inner solar system, passing well within a million miles of the sun. Scientists are all geeked about the possible windfall of information they could glean from this phenomenon. Comets can act as tracers interacting with the sun's magnetic fields, which give rise to the solar flares that could afflict earth.

ISON is unquestionably destined for an encounter with the sun, but it's fate nearer the sun (closest approach is on November 28, 2013) is unknown. It could be a visual spectacle or an over-hyped dud. Therein lies the fun--and inspiration for the Comet Festival in South Bend, IN.

Dacota Schrader illustrated Comet ISON as a turkey rounding the sun on Thanksgiving Day. The yellow tail feathers represent the comet's dust tail. The turkey's blue left arm, extended directly outward from the campfire, depicts the ion tail that is down solar wind.

After ISON rises in December, with your scope set out, consider waiting for the morning sun. Yes, you can safely look at the sun if you take the right precautions (see http://www.transitofvenus.org/june2012/eye-safety), as millions of people did during the 2012 transit of Venus.

Lately my favorite aid for sungazing is the Sun Funnel, a simple device that fits into an existing telescope and allows a crowd to observe a projection of the sun concurrently. You can make your own Sun Funnel and jump into the fray immediately. Frankly, I'd like to see Sun Funnels made commercially so more people can enjoy the spectacle. On that note, I'd like to propose our community do something about that.

The Michiana Science and Technology Center, Inc., is a budding organization in northern Indiana with an agenda of generating and supporting science and math education while interfacing with local businesses. I propose MSTCi do a trial run--a proof of concept--by guiding students in bringing a commercial version of the Sun Funnel to market. Put some skin in the game and see if we can indeed implement the proposed model. From the exercise we could learn what MSTCi may want or not want or
Another fantastic opportunity to view the sun in the United States will be during a **solar eclipse on August 21, 2017**, when a total solar eclipse is visible along a swath from Oregon to South Carolina and a partial solar eclipse is visible across all of North America. Consider it a target date by which to have a commercial Sun Funnel well distributed.

Those are my musings for the day. Thanks for reading and considering them.