



MICHIANA ASTRONOMICAL SOCIETY

The Sirius Observer

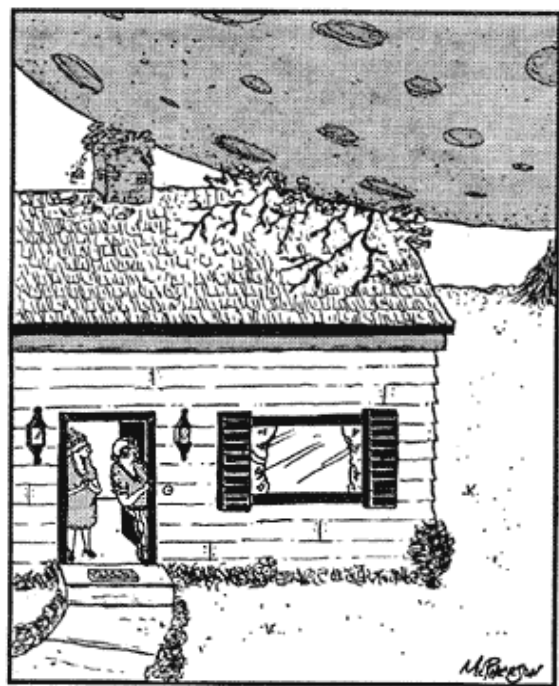
October 2008

South Bend, Mishawaka, Elkhart, Niles

Just Taking Up Space!

It is not conclusive yet, but NASA believes the Mars Pathfinder has found proof of life on Mars. The cd player was stolen.

The Hubble Space telescope has captured an image of two galaxies colliding. It's so detailed you can see lawyers rushing to the scene.



"They say this is the closest Mars has been to Earth in 60,000 years."

Event Calendar

October 2008

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7 ☾	8	9	10	11
12	13	14 ●	15	16	17	18
19	20	21 ☽	22	23	24	25
26	27	28 ○	29	30	31	

- Oct 7: First Quarter Moon
- Oct 14: Full Moon: Hunter Moon!
- Oct 20: MAS Meeting, 7:00 PM
- Oct 21: Last Quarter Moon
- Oct 25: New Moon observing, Potawatomi
- Oct 28: New Moon

November 2008

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5	6 ☾	7	8
9	10	11	12	13 ●	14	15
16	17	18	19 ☽	20	21	22
23	24	25	26	27 ○	28	29
30						

- Nov 6: First Quarter Moon
- Nov 13: Full Moon
- Nov 17: MAS Meeting, 7:00 PM
- Nov 19: Last Quarter Moon
- Nov 27: New Moon / Thanksgiving Day
- Nov 29: New Moon observing, Potawatomi



With the onset of winter a lot of observers put their telescopes away and hang up the bug spray for another season. This is a shame, because winter

skies are in many ways better for observing than summer skies usually are. What most folks complain about the most in winter is the cold, so here is excellent advice on staying toasty and comfortable during the best observing season of the year!

The Ironman's Tips for Staying Comfortable While Observing in Cold Weather

1. No cotton or polyester/cotton blends next to your skin. This includes underwear and socks. Polypropylene longjohns are excellent provided they're thick enough, arctic-weight wool/polypropylene blend longjohns are even better. Because cotton doesn't wick perspiration away from your skin, it quickly becomes moist and cold in cold weather, leading to rapid loss of body heat. The same property that makes cotton great for wearing in hot weather can contribute to hypothermia in cold conditions.

2. Dress in layers. Many thin garments with lots of dead air between layers to trap heat are better than a few thick ones. For observing in temperatures below 25 degrees, I generally wear the following:

Wool/polypropylene or polypropylene

longjohns (two pairs for subzero temperatures)
 Polypropylene sock liners
 Wool socks (one or two pairs)
 Flannel shirt (a synthetic fleece shirt would be even better)
 Jeans (synthetic fleece pants would be even better)
 Wool sweater
 Fleece layering jacket
 Down-filled bibs
 Down parka (rated to -40 degrees with the bibs)
 Balaclava
 Wool/thinsulate watchcap
 Wool fingerless gloves
 Pac boots (rated to -40 degrees when the expected low is above 20 degrees or another pair rated to -100 degrees when the low is in the teens or below or when observing on snow)

3. Always bring more layers than you think you'll need. Add or remove layers depending on air temperature, wind chill, and how much you're exerting yourself. If you're wearing enough to start feeling too warm while you're driving to the site or setting up your gear, you've probably got on too many layers and will get cold after you've stopped moving around as a result of having perspired under your cold weather gear. Don't put on all of the layers you plan to wear while observing, including heavy boots



and socks, until you have everything set up and are ready to observe. On the other hand, if you feel comfortable wearing all of the layers you've brought while laboring to unload equipment and set up, you've probably not brought enough and will start to get cold as soon as you stop moving around.

4. Cold feet and/or hands are a symptom of a falling core body temperature. When this happens, the brain redirects blood away from the extremities to the vital organs, and the feet and hands become cold. If your core temperature is dropping, the heaviest boots and gloves won't help you feel much warmer. Only adding layers will help. Drinking something hot will also speed recovery. If you keep your core temperature up, you can often observe in comfort without gloves.



5. Don't forget your head. Always wear at least one cap in cold conditions. An uncovered head rapidly radiates body heat away. A hood is even better, but often gets in the way. That's why I often wear a balaclava and a watch cap.

6. Temperature ratings for cold weather gear assume the wearer is actively exerting himself/herself. Wearing a

parka rated for -40 degrees might seem excessive when its in the twenties, but experience has demonstrated that additional layers are still needed for a sedentary activity such as astronomy. Boots rated for -100 degrees are quite comfortable when the temperature is in the teens or below, especially if you're standing on cold ground or snow, but not if they've become moist from being worn in the car on the way to the site. Always remember to take the liners out of pac boots after an observing session to allow them to dry out, especially if you plan to observe the following night.

7. Keep well hydrated but avoid caffeine. Caffeine is a diuretic and reduces blood volume, making it more difficult for the body to maintain a normal temperature. I usually take bottled water and a half-gallon of decaffeinated coffee with me on cold nights.



8. Cold conditions are often very dry conditions. Don't forget the lip balm, etc. I often find that any exposed skin gets dried out during the winter. A little moisturizing lotion when I get back to the house usually helps to keep my hands from becoming too badly chapped.

9. Chemical hand warmers are another good item to have, but aren't a substitute for wearing adequate layers

of clothing. My parka has two pockets inside over the kidney area that are designed to hold hand warmers. This is a nice feature worth looking for in a heavyweight parka. Hand warmers can also be used as eyepiece case heaters.

10. Keeping warm in freezing temperatures requires the body to burn calories at a great rate. Eat well before you head out to observe and bring some high-carbohydrate snacks to stoke the fire a bit during the night. For extended observing sessions during the colder months, a thermos of hot soup can really make the difference between an enjoyable outing and a cold and miserable one.



11. In addition to making it easier to move around while wearing multiple layers, loose-fitting clothing will keep you warmer because it allows for more dead air between

the layers. Also avoid tight-fitting boots. Even with a couple of pairs of wool socks on, your feet will still get cold if you've cut off the circulation to them by squeezing them into boots that are too small to accommodate the extra socks. I wear a size 10 shoe, but my Pac boots are size 11. A larger size also allows me to place an additional wool inner sole under the boots' inner liner boots. Try on boots and outer

layers while wearing the inner layers and socks you plan to wear while observing to find items with the proper fit.

11. If you have to retire to your car to warm up, please beware of carbon monoxide poisoning. Never sit inside a stationary car with the windows rolled all the way up while the engine's running. Duh.

Hope these suggestions are useful to those who had questions about how to stay comfortable in cold weather.

*Tom "Ironman" Dietz
(Northern Virginia Astronomy Club)*

