

## McCarthy Chronicles – Leonid Meteor Shower, November 18, 2001

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**“Meteor Storm - McCarthy Observatory - November 17 to 18”**, the sign read. This was a risky announcement, to say the least. In astronomy, it seldom is wise to tempt fate. How many previous meteor storms turned into astronomical yawns, delivering nothing near the hyped load of sky streaks? Nonetheless, the dye was cast and the north eastern United States lay ready to receive anywhere from 1,000 to as many as 100,000 meteors per hour during the pre-dawn hours of Sunday morning.

Although meteors can be seen from any place having clear skies, The McCarthy Observatory seemed as good a place as any to view the spectacle. Not only would there be a number of telescopes up and running to view Saturn, Jupiter and the Orion Nebula, but there also would be an untold number of night sky enthusiasts to share the experience with. Misery and celebration love company.

And so, we dug in, whiling away the early part of the night comparing views of Saturn and Jupiter from seven different telescopes – set up and operated by the WCCSAS. We proved that a 4 inch mask over a 10 inch F4 Newtonian provided a clearer view of Saturn’s rings than an unmasked 10 inch f4 Newtonian. (Or maybe the masked 10 inch was better collimated than the other 10 inch). We marveled at how the contrast provided by a Celestron 8 inch Schmidt Cassegrain telescope awarded us with a clearer view of the Orion Nebula than either of the two 10 inch telescopes.

But the best experience of all was watching the continuous stream of New Milford visitors enjoy the view of the planets from the eyepiece of the 16 inch Schmidt that graces the observing deck of the JJ McCarthy Observatory. The number of exclamations of “Neat!” and “Cool!” and “Awesome!” were nearly as numerous as the exclamations to come of the peak period of the meteor shower.

As the night wore on, telescope viewers settled in to become sky viewers, primed to count each passing meteorite. The FM radio meteor counting experiment was set up. Science can be painful at times. FM static and garbled German polkas blared out of the radio until antennas could be pointed to a normally quiet, distant FM radio source. FM radio signals do not bounce off of the ionosphere as longer wavelength radio waves do. As a result, FM radio signals do not propagate more than about 30 miles from their source, regardless of broadcasting antenna power. The theory is that a passing meteor and its associated ion trail can provide a radio reflective surface for FM signals to bounce off of. As the meteor ion trail dissipates, the FM signal bounce diminishes. A passing meteor thus generates both a luminous tail and a burst of FM radio music for several seconds following its passing.

It worked. Meteors we could not see were detected as bursts of easy listening rock and roll from what we thought was a Hyannis, MA FM radio station. Not only a successful experiment, but in the end, not that painful either.

And it was cold. In the wee hours of the morning frost began to coat the eyepieces of the outdoor telescopes. Teeth chattered, people shivered and the meteors came.

Did we do good science? There's one! There's another! WOW that was neat! The exclamations were the best way to count the meteors that flew overhead. From 1:00 a.m. to 2:00 a.m. – 60 observations. From 2:00 a.m. to 3:00 a.m., 120 observations. From 3:00 a.m. to 4:00 a.m. 500 observations. After that – at least 1,000 “WOW’s” an hour. We gave up counting and just lay back and watched the celestial fireworks. And some degree of warmth crept into our bones. We were supposed to record each view, its direction and the quality of its tail. But no, seeing the bright streaks coming in from all sides was good enough.

What a memorable night it was! A moonless, cloudless sky - the companionship of hundreds of eager sky watchers and a celestial fireworks show, made the event spectacular. By 5:00 a.m., it appeared that we were getting an average of one to two meteors per second. But who cared? The results were certainly as predicted and the night was well worth the effort.

But for me, the most rewarding experience of the night came from a four year old girl. Mom and Dad let her stay up late to come to the observatory to see the sky. I pointed my 10 inch Newtonian at Jupiter and held the little girl up to the eyepiece. Her squeal of delight made me feel proud and thankful for the gift that has been given to the community by WCCSAS and the JJ McCarthy Observatory.

Science and education in the community are being done!

**Rick Birnbaum**  
**February 21, 2001**