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Roger Hill, Editor

May was a wonderful month in many ways, but into each life a little rain must fall. I had really hoped to make it down to Florida in the middle of the month to watch a Space Shuttle Launch. However, my Mother-in-law passed away quite suddenly, and as her funeral was the day before the launch, I was unable to make it. There are only two more launches scheduled, and the next one is in mid September later this year. With my work schedule, my son and I will be flying down for this one, rather than driving down as we had planned.

Back in December of 1972 I had a chance to go and see the launch of Apollo 17...the last flight to the Moon. Ken Chilton and I were going to go down and I was to be the cameraman for his cable TV Show. This meant we'd have press passes, and would get to see the launch from a far better position than the general public.

The problem was that I had a couple of projects due (I was in High School at the time), as well as a major test. Justifying it that there would be plenty of other opportunities to see Moon launches, and many other trips with Ken, my parents strongly suggested that my school work was, in the long run, far more important. Almost forty years after the event, it's hard to believe that missing a week of school could possibly have had more significance that being a witness to Apollo. There weren't many more trips with Ken, either, but the ones that remained were memorable.

That decision has had a far reaching effect on me, though. I think I tend to "Seize the Day" more than I would have done if I'd seen that launch.

And I also want to make sure that my son sees one. You see, I'm most fortunate in that I have an excellent relationship with my son. He and I have both vowed to each other that, for as long as we are both able, that we'll go camping together each year. We've been to Manitoulin several times, and up the Bruce Peninsula. This summer we were going to visit Mount Washington in New Hampshire, 6,288 feet above sea level (but still a couple of thousand feet below Les). Mt. Washington gets some of the most severe weather on the planet, though, and until recently had the highest recorded wind speed ever directly measured outside of a Tornado or hurricane, at 231 miles an hour.

What we'll also have this time, as never before, are two GOTO scopes. Jonathan has a passing interest in astronomy, and likes to cruise the Milky Way with either my ETX-90 or my Williams Optics 80mm. I use my 12" SCT. He knew that there was all sorts of stuff to go looking at, but without my passion, he wasn't particularly interested in going hunting for faint fuzzies.

So, about a year ago, I bought a German equatorial mount, an EQ-5, with the intent of transforming it into a GOTO mount, exactly the same as Les was planning. The trick is that you need some Meade motors—which is enough to put some people off immediately. The biggest problem is that Meade no longer sells the motors, and so you must resort to finding them some other way. I found a guy in the States that was parting with a telescope that already had the motors installed. I offered him two thirds of what he wanted for the motors and the 497 hand controller. He could keep the rest of the telescope and the mount. With some trials and tribulations, including a couple of catastrophic errors (don't use Loctite on plastic, and make sure that you don't strip the gears inside the motors), it works. Actually, it works quite well.

In the meantime, a fellow out in Kingston was selling the mount for an ETX-90EC that has the GOTO package already installed. He just wasn't selling the 'scope. So, I bought the base, and sure enough, my ETX-90 fits on the new base perfectly. The 497 hand controller also allows this scope to GOTO. However, I only have one hand controller, so this means I can use either the ETX-90, or the EQ-5, in GOTO mode but not simultaneously.

Needless to say, I'm keeping my eyes out for another 497 hand controller.

What this means is that now I can give him a number of objects he should go looking for. He's really looking forward to it.

Also, I now have a much smaller set up than the big Meade. I can use an autoguider with either the EQ-5 or the ETX, although I'll need a laptop. Perhaps my 12" scope won't be doing quite as much travelling anymore!

On another note, my observatory was built 12 y3ars ago, and suffered a major problem. For some time now, the wooden pier I use hasn't been as steady as I would have liked. I figured that with it being designed to hold a C8 (40 lbs) , that by the time I put the 12" (75 lbs) and the wedge (50 lbs), cameras, autoguiders, balance weights, guide scopes, etc. that I must be getting close to 150 pounds of weight on the pier.

Les had suggested that I could easily stiffen it by pouring concrete down the hole in the middle. So, after getting back from Gary's cottage last month, and seeing how rock steady a concrete pier could be, I decided to replace the wooden pier completely, if I could.

The plan was to drill a hole through the pier and put a crowbar through it. A pair of hydraulic jacks, one on each side, would slowly lift the pier out once I'd smacked it on the top a few times with a big sledgehammer to try to break the bond between the wood and the concrete.

I never got that far. After taking everything out of the observatory and lifting up the floor (screwed down...I'm not handy enough to use nails), I used the pier to haul myself upright, and heard it crack. Not a pleasant sound. I was then able to easily rock the pier back and forth until it came away completely. It was rotten at the base.
Two thoughts came to mind almost immediately:
1) I'm really glad my 'scope wasn't on it when it broke; and
2) No wonder I'd been having difficulty getting a good polar alignment!

It seems that the concrete the pier was in is slightly porous, and wood rotted at the base. Another problem was that since the wood was wet, it expanded and cracked the concrete in a couple of spots. So, now I've started to dig the old pier out. The ground in my area is the usual suburban southern Ontario solid red clay, and with the dry weather we've been having, it's closer to rock than clay. It's very slow going. Are there faster ways? Well, one person suggested I do what he does with stumps: burn it out, but I can't do that inside a wooden observatory.

So, I'm stuck digging a 2' by 2' hole in the middle of my observatory, and I have to go down almost 4 feet. With everything that's been going on recently, I've only had an hour here and an hour there to work on it. When I'd done though, I'll have one heckuva solid pier.

Clear skies, one and all,

Roger Hill
Orbit editor and President.

Here WE Grow Again!
Addition to Split Rock Observatory.

Got a call from Andy Blanchard one weekday in March….."Gary, what are you doing this weekend?…want to drive to Chatham for an estate sale on astronomy equipment?"….I couldn't resist….I tried…but failed miserably!

I had a list of stuff for sale from the vendor, and I had my eye on a 31mm Nagler they had for sale…Andy had much bigger ideas!....

They had a 14" RCX and a Sky shed POD that Andy was interested in….but needed a place to put if he could get it for the right price….and naturally I offered a spot at my observatory at the cottage nn...ww…..say no more say no more! ……little did I realize that on that day we would walk away as partners on the scope and POD…..and a REALLY BIG adventure for the next few months!....oddly I didn't get the Nagler but picked up a nice 4mm Radian!

We disassembled the scope and packed it up in the back of Andy's van and drove off into the sunset…..(actually away from the sunset as we were headed eastbound!)....

The next hurdle was how to get the POD back…..solution….borrow Dave Yates' trailer and load it up in that….only problem was….the trailer was only 4'x 7'…how do you fit a disassembled 8'x8' plastic dome?????....the following Friday we made another trip to Chatham….we had a week to figure it out.
Gary Bennett helped that Friday and the three of us managed to "MacGuiver" it onto the trailer… well we did it, and much to our surprise…it was relatively easy to transport.

We moved the dome to my place in Oakville where it rested for the evening and bright and early Saturday morning we headed on up to Ardoch….**minus** the scope…….well….it had a few issues…so Andy & I decided to ship it back to Meade in California for a complete overhaul…..in the meantime it was time to prepare the new home for it.
We temporarily set it up in the field adjacent to the existing roll off building….and planned where we wanted it to go….

…ok…that will do……

Next step was to install the pier…no small feat as the observatory sits on top of one HUGE slab of Canadian Shield granite!.....at various depths…..I installed several piers for visiting telescopes…one for Gary Bennett…had to dig down 3' before we hit the slab, one for Roger Hill….another 2' hole….and one for Dave Yates….we hit the slab at 6"…… so on with the digging….(hoping the 6" hole was my destiny too!)
I hired a professional hole digger from "Arm-Strong"…actually…..myself with a garden spade….and I started digging….1'……2'……3'…oh boy…..42" and hit the slab!.... more like an underground hole for a nuclear missile silo!

Next was to put in 3 anchor bolts into the bedrock to anchor the whole piper to the granite slab. This was no small feat either as granite is a BEAR to drill into! With that completed it was time to put in the pier forms.

At the bottom of the hole was a 24" "bell" form to distribute the weight of the pier over the largest possible area, and poured directly over the anchor bolts to lock it into the bedrock…..then a 16"x16" square form was placed over it and filled up with 725 Kg's. of concrete!

Next was to design a “jig” to place in the anchor bolts for the steel pier….This was accomplished by placing the bottom of the pier over a piece of plywood, tracing out the holes onto the plywood, drilling them then placing the anchor bolts into the holes and tightening them up to hole them in place….that way an EXACT placement could be done….then place it in the concrete.

Once everything was set, remove the plywood and set the name in concrete….! JAAG stands for “**J**ulie, **A**ndrea, **A**ndy and **G**ary….sentimental I know….. J

Next was to build a platform for the POD so sit on…..Based on the dimensions of the POD a 12’x12’ deck was needed……. The following pictures outline its construction …and placement of the POD.

All done …..for now…..

Next Month ……Re- servicing the Observatories with a 60 amp. Service and Installation of the scope!!!

Kevin Hobbs sent along something interesting that solar observers might be interested in. Actually, he sent this some months ago, but I put it in the wrong email folder, and I only spotted it today as I was clearing out some crud from one of my computers.

The original author is a fellow called Jim Kennedy, and was, according to Kevin, "originally intended to keep us 6m Radio Operators up to date ... but certainly applicable to Astronomy!"

At Jimmy and Dick's BBQ in October I made a presentation on Cycle 24 noting that the Cycle 23 minimum occurred around early December 2008. This "officially" signalled the start of Cycle 24. (Of course we have been seeing occasional Cycle 24 spots and magnetic regions in both solar hemispheres since December 2007.)

I also presented a plot that showed the R-sunspot-index values separately for the northern and southern solar hemispheres, since differences in the northern and southern solar hemispheres' behaviour have played a key role in the unusual character of Cycle 23. The sluggish southern solar hemisphere seems to be responsible for dragging out Cycle 23 for so long (12.6 years). (The total Ri is the sum of Rn and Rs.)

That plot compared the behaviour of the solar minimum that began Cycle 23 to the 2008 solar minimum that began Cycle 24. I reported that the then most recent data (through September 2009) were consistent with the northern solar hemisphere beginning to track the upward climb in Rn, signalling the long awaited "upswing" of Cycle 24 activity.

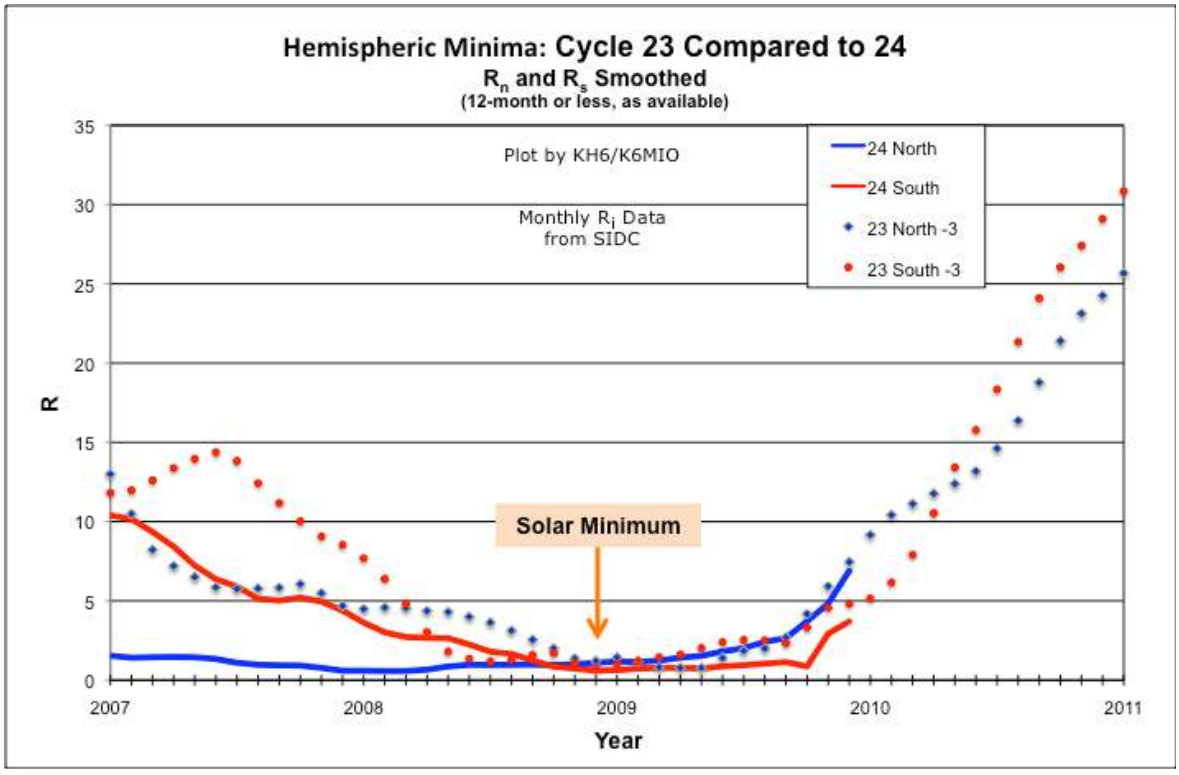
I also suggested that we should be seeing a clear indication of the upswing by the beginning of 2010, IF the cycle was really starting up in a way consistent with Cycle 23.

I am happy to report that the most recent data are consistent with a real beginning of Cycle 24 activity.

The attached update of the October plot (seen below, Ed.) shows the northern and southern R indices through December 2009. The northern hemisphere shows a clear jump in activity that continued to increase through October, November, and December (and appears to be continuing into January); and it is tracking quite close to the Cycle 23 northern- hemisphere trajectory.

Even more encouraging is that in November and December, there is a similar jump in the southern hemisphere R, which appears to be approaching the Cycle 23 track.

I must point out that, while the Cycle 23 data are the traditional 12- month running average values, the last six month's of Cycle 24 data (July-December 2009) are averages of only the available data to date (e.g. July is an 10-month average, and December is a one-month average). Consequently, the "real" values for this last period may change over the coming months as additional months are averaged in to complete the 12-month average. (IF a normal pattern is followed, they should actually increase slightly.)

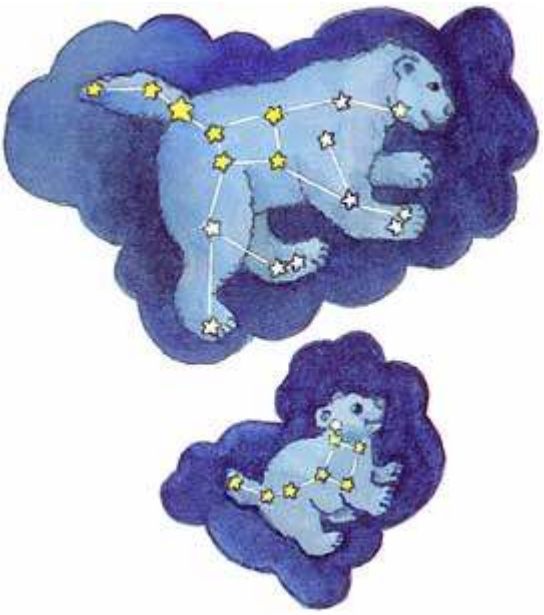


The current, very preliminary, indications continue to suggest that solar maximum may occur around the Northern Hemisphere winter of 2012-13, if normal rules apply (they may not).

I do not make any inferences about the impact on the solar maximum peak Ri value at this time.

73, Jim

Legends of the Big Dipper—Gary Colwell



1. In a Cherokee legend, the handle of the Big Dipper represents a team of hunters pursuing the bear from the time he is high in the sky in spring, until he sets on fall evenings. At the start of each evening, the bear and his hunters have moved a little farther west in the sky.
2. The Iroquois of Canada's St. Lawrence River Valley and the Micmacs of Nova Scotia have a more elaborate story. The bear is represented by the Dipper bowl and is hunted by seven warriors. Each spring the hunt begins when the bear leaves his den (Corona Borealis). The bear isn't killed until fall and the skeleton remains in the sky until the following spring. A new bear then emerges from Corona Borealis and the hunt begins again.
3. When you look at the Ursa Major, the stars show the bear with a long, curved tail. According to another Iroquois legend, Fox dug a fishing hole in a pond and tricked Bear into placing his beautiful tail in the icy water in hopes of catching fish. Fox left while Bear waited in position until the next day. The fishing hole froze and locked Bear's tail in the ice. When Bear realized he had been tricked, he became angry and jerked his tail with so much force that it snapped off. To this day, bears have short tails and no love for the fox. If you ever hear a bear moaning, it is probably because he remembers the trick that Fox played on him long ago and still mourns for his lost tail.
4. Instead of a bear, the Sioux of central North America see a long-tailed skunk.
5. According to one Chinese legend, the stars of the Big Dipper form a bushel measure to deliver food in fair amounts to the population in times of famine.
6. The ancient Hebrews also saw a bushel measure.
7. The early Britons saw the Big Dipper forming King Arthur's chariot.
8. The Germans pictured this group of stars as a wagon and three horses.
9. Romans viewed the Big Dipper as a team of seven oxen harnessed to the pole and driven by Arcturus.

In Greek legend, Zeus and Callisto, a mortal, had a son called Arcas. Hera, Zeus' jealous wife, turned Callisto into a bear. One day Callisto's son was out hunting and, not knowing that the bear was his mother, almost killed her. Zeus rescued Callisto, turned her son into a bear as well and then placed them in the sky together. Callisto is Ursa Major and Arcas is Ursa Minor.

Oh we get Pictures…

Many months I get pictures sent to me, and May was no different. Ed Mizzi, for instance, took the front cover picture using a Canon XSi at 400 ISO, with a 1.0 second exposure and a 100 mm telephoto at F/5.

The picture at the right, of Earthshine, is one of mine. I used a 300mm F/4 SMC Takumar lens attached to my Canon XSi, at 800 ISO and a 2 second exposure.

The picture of M106 was done by Gary Colwell. It consists of 22 – 480 second exposures (3 HRS) and associated dark, bias and flat frames, and processed using Images Plus and fine tuned in Photoshop CS3 He said that the seeing was 9/10, the transparency was 9/10, and the night was "totally awesome". You can't disagree with the results!

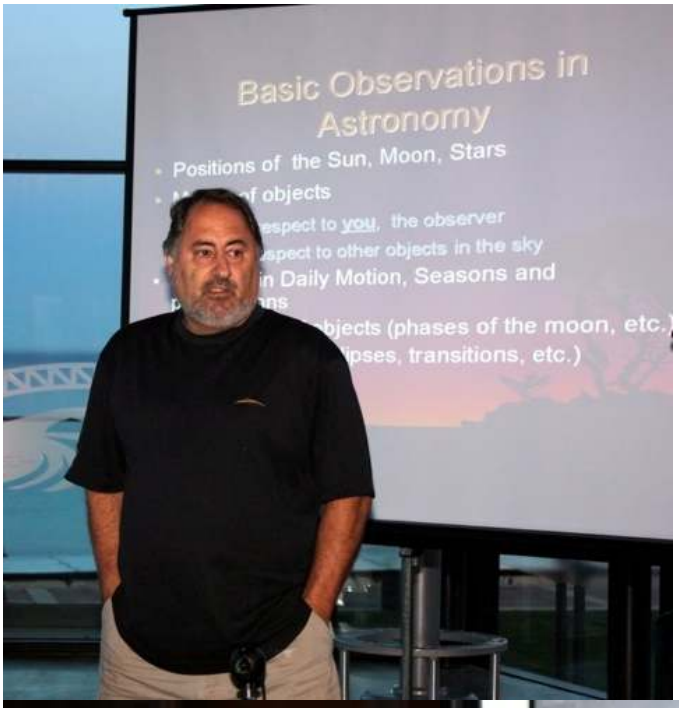
Finally, for those who have heard of Split Rock Observatory, but never seen it, here's what it looks like at the moment. There's two buildings there now. One housing a 14" Meade RCX in a Sky-Pod, and then there's Gary's Williams Optics 127 in his roll-off building observatory. There's also about three extra piers for visitors, and recently a new hydro line was run, providing plenty of electricity for when the telescope, dew heaters, laptops, telescopes and battery rechargers are all plugged in and working!

What you missed last Month!

Our main speaker for the May meeting was Jerry Wright of Perceptor. Not only did Jerry talk about his passion—cosmology—but he gave an insight about some of the hardware many of us would like to get our hands on!

Also, we were able to connect up with Les Nagy down in Chile, who, using Gary Coldwell's laptop, and Skype, was able to attend the meeting. It worked well enough that we're going to try it again next month, and we're hoping that Les can participate for the September meeting!

One of the things that worked out really well was that we went to East Side Mario's at Mapleview Mall for our after-meeting gastronomy session. It worked out very well indeed. And my apologies for doubting the people who said, right from the start, that we should go there!



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What you Missed pictures by Ed Mizzi.