Orbit

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Roger Hill, Editor

After the end of World War I, a song popular at the time asked "How you gonna keep 'em down on the farm, after they've seen Paree?" The song was about the returning American soldiers who'd travelled to France, but now had to return home, and go back to the farm. The image, for me, was like something out of Oklahoma!, although the Rogers and Hammerstein musical was set in the late 1890's, if memory serves.

To me, the milky skies of southern Ontario held a similar allure after having spent a couple of weeks in Chile. And I guess that I'll have to apologize right off the bat...you're going to hear more about Chile in this issue, and in the coming months. There is something you can do about it, though...you can submit so many articles, that you won't have to read mine!

Oh, and let me put in another apology...I'm just not able to set up the trip to Manitoulin this May. I do expect to go there for the Manitoulin Island Star Party in August, and I can highly recommend the dark skies there. They are vastly superior to those at StarFest, and if you can make your way there, I'd be happy to introduce you to some of the more bucolic treats the island has to offer. It's one of my favourite places to visit, and I must admit, I suspect I'd be happy to retire there. The thought of observing under those pristine skies every clear night is a very tempting one.

So, I haven't done any observing from my observatory, but I still had my 'scope out for a couple of events. The first one led to the second. The first was Earth Hour, and while it was technically in March, it was right at the end of the month. I took my 12" SCT to Caledon, where a very good friend of mine is the Minister there. While my son and I were showing Saturn and M42 to the people who attended the celebration, I met a fellow that my wife worked with years ago...he was with the Scout group that was helping out with things that night. I'd met Eric a couple of times too, and I told him that my sons cub and scout groups had been to the Hamilton Centre Observatory many times. He asked me if it would be possible for me to bring the scope out to one of their meetings, and I answered in the affirmative. Emailing back and forth, we found that the only mutual time we had was a camp they had planned for April 18th.

This would be a camp not only for the Scouts, but also the Cubs, so there'd be quite a few kids there. This was going to be a challenge...trying to keep 20 or so kids interested, entertained and informed while simultaneously trying to keep fingers from touching eyepieces and corrector plates! The sky was relatively clear, but a bright Full Moon and a hazy sky meant that there were very few stars that could be seen, even in this normally dark part of Ontario. Still, Saturn and the Moon were big hits, as were Mizar and Alcor. Deep sky stuff, even M42 lowering in the west, were not possible. Amazingly, the power cord that I was using to run the 'scope off my car battery, was only kicked out once! Saturn was certainly the biggest hit of the night, although my green laser gave it a good run for it's money! Another group that was camping in the area also dropped by to have a look. They'd watched me set up, and asked if they could also have a look. I said that since I'd been invited by the Caledon Scouts, that they'd be most welcome to drop by, but only after they'd finished. So, I spent another hour in the not-dark before I packed up and headed home. It was a very pleasant way to spend an evening.

I used to really enjoy doing sidewalk astronomy several years ago in Burlington. There has to be a place in the Hamilton area where people go for a nice pleasant stroll in the evening, and where we could set up some scopes. Anyone know where that is?

Anyway, elsewhere in this issue, you'll find a report on NEAF from Andy Blanchard. We welcome back Robin Allen, who informs us of a mystery regarding the telescopes of Reverend Marsh. Regular contributor Carlos Felix in Mythology and Cosmology visits Crux—the Southern Cross, this month. This gave me the opportunity to put one of my pictures from Chile on the front cover.

Roger Hill

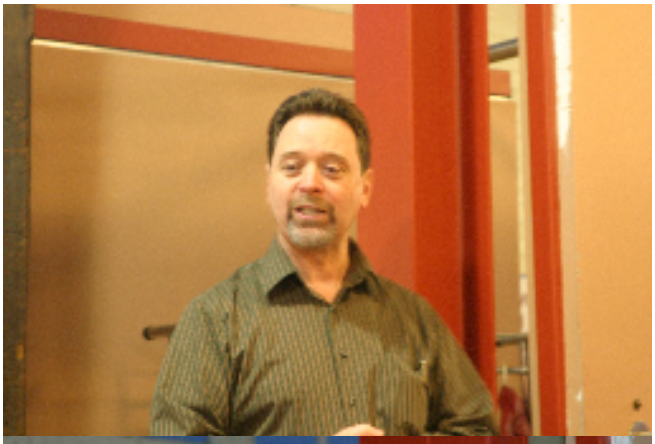
What you've missed!

April was when the latest crew who went to Chile got to show off their images and tales. As one of the participants, I was quite taken with the "spin" that others put on the trip, what they found memorable, and worthwhile.

There were a number of highlights, and not all of them had to do with the Chile trip.

First of all, John Williamson was unable to attend, and Andy Blanchard stepped up to run the meeting.

Bert Rhebergen told us of some of the latest happenings on the Sun, Colin Haig (obviously suffering from Milton's bright lights), told us about a video time inserter he'd been playing with recently. Mark Kaye was a touch tardy in arriving, but most welcome, nonetheless, and Gary Colwell offered up some cautionary evidence as to why you shouldn't make faces as a child ("Because you'll stay that way").



You Might NOT Be An Astronomer If You Think That…

Culled from Newsgroups...Original Source Unknown
AURORA BOREALIS—is an exotic dancer in Nome, Alaska

AN ASTRONOMICAL UNIT—refers to the cost of an Air Force toilet.

BETELGEUSE—is the stuff you squeegee off the windshield of your car.

CLOCK DRIVE—refers to the street beneath Big Ben.

A GASEOUS PROMINENCE—is Newt Gingrich.

HYPERED FILM—is when you really need to brush your teeth.

LIGHT POLLUTION—is a few beer cans in the yard.

AN UMBRA—is something you need during a rain shower.

PLUTO—is Mickey's sidekick.

NORTHERN LIGHTS—is a brand of a mentholated, low nicotine cigarette.

PERIHELION—is a guy who sang "That's Amore" in the 1950s.

SOLAR CORONA—is warm Mexican beer.

AN OFF AXIS GUIDER—is a persistent backseat driver.

A MAKSUTOV—is a wine bottle filled with gasoline and thrown at tanks.

A STAR PARTY—is a Hollywood bash.

SCHMIDT-CASSEGRAIN—is a German meal made with rice.

REFRACTOR—is when Vito breaks your leg for the second time.

ZODIACAL LIGHT—is a low alcohol beer.

A STAR CHART—predicts the future.

A PENUMBRA—is something you need during a rain shower or when you need to write a note.

THE PHOTOSPHERE—is a snapshot of a beach ball.

A GRAVITATIONAL LENS—is the new contact your kid drops through an open grate.

A NEUTRON—is a fig cookie.

A LIGHT YEAR—is a period of time when you don't have enough cash.

A BLACK HOLE—is that sump in your basement.

SOLAR WIND—is what your fat uncle had after Thanksgiving dinner.

URANUS—is an anatomical feature rather than a planet.

FAMILIAR OLD MARSH or ONE of MANY?

One of the enduring questions about the Marsh instruments has been; Just how many of the larger 5" Marsh models were made and how many are still in existence? Today we know for sure there are at least two large 5" models. They are the "Marsh 5", and the "McMaster 5". Both telescopes are currently in the keeping of the Hamilton Centre.

When looking into the history of "Rev. D.B. Marsh", it is hinted that he might have produced at least half a dozen telescopes of the larger size. After studying the history a little more I have found that in the nineteen thirties DB's son John A. Marsh started a business producing "DB Marsh" style telescopes. And in an article for a Toronto newspaper John Marsh claimed to have produced twenty-five such telescopes. In the quote however, he did not specify if they were refractors in the Marsh style or of some other arrangement. If they were in the "DB Marsh" style and the number is true, it seems amazing these refractors have not been identified and seen in public so far.

One of the problems with determining how many there might be, is that the design once perfected by "DB", was not changed over many following years. When viewing old pictures of the Marsh telescopes it is very hard to make out any physical differences that might show that it is in fact another instrument. When discussing the history of the Marsh instruments with a Marsh descendent, I was surprised to learn that he had always believed that there had only been one Marsh 5", and was shocked to learn of the McMaster 5" existence, when I told him about it.

The following image, I obtained several years ago, and clearly it shows a mounted Marsh possibly 5" telescope. The photo print was not identified in any way. So again the question is, when, and where was this photograph taken? The picture suggests a recent installation, as concrete dust can be seen on the base. Examine the background. Could that be images of Halley's comet or another identifiable comet that could provide a clue to the date of the photograph.

My feeling has always been that this is the inside of the Bruce Observatory at Elmwood on the Hamilton Mountain. This would be shortly after its construction, sometime around 1909. William Bruce was known to have a 4" Marsh refractor in his observatory, at this time. Could this be it? It doesn't help that the Elmwood observatory dome had been the former property of Marsh himself, which was either given or sold to Bruce. So either inside would look the same.

Perhaps instead, this is the inside of one of DB's many observatories, which he constructed during his travels as a Presbyterian Minister. Or this could be the inside of the McMaster Observatory, which at one time sat on the roof of Hamilton Hall on the campus of McMaster University. In which the "McMaster 5" was mounted and is now in our care. Lastly this could be a John A Marsh built instrument inside an observatory at the property of some unknown telescope customer.

I always like to note to others viewing this image that the real "Marsh 5" scope and pedestal accompanied the Rev DB Marsh to his many ministerial charges around Ontario, and even five years in Bermuda. That must have been quite a packing feat, since the pedestal alone weighs in at over 400 LB.

So gentle reader, if you think you can solve the mystery of the Familiar Marsh image or know of any other possible Marsh instruments in use somewhere, I would like to hear from you.

Robin Allen

roboallen@sympatico.ca

Editors Note:

Robin provided a photograph, but the rather large size of it precludes it's use here. Please turn to the last page of Orbit to view it. If you're running out of ink or toner in your printer, you may want to skip printing the last page, but do have a look at it online.

Thank You.

R. H.

MYTHOLOGY AND COSMOLOGY

by Carlo Felix

Given that members of our association have recently undertaken to explore the southern skies, it is only fitting that an edition of Mythology and Cosmology should complement this enterprise.

Southern Cross

Mythology

Of the 88 constellations, the Southern Cross is the smallest. The Ancient Greeks had known about it, but then it had been regarded as part of the hind legs of Centaurus. However, by the 15th century, the constellation had dipped so far below the horizon, because of the precession of stars around the celestial pole, that it was lost to the view of the Europeans.

The cross was instrumental to navigators that used it to indicate the south celestial pole. As its importance achieved prominence, it became, by the 16th century, its own constellation.

On mythological maps of the sky, adorned as they are with a menagerie of mythological characters and figures, the Southern Cross is pictured as a Christian cross. It, perhaps, may be the only reference in the stars to Christianity.

Cosmology

The Southern Cross contains the distinctive Coal Sack, which helps in the discernment as it lies in the thick of the Milky Way. The Coal Sack Nebula is contrasting dark area in an otherwise richly starred area of the sky. It's a dark cloud of dust that blocks the light from the Milky Way stars behind it. The constellation's brightest star, Alpha Crucis, is the most southerly first-magnitude star. Near Beta Crucis is NGC 4755, the Jewel Box Cluster, one of the gems of the Southern Hemisphere. Its open cluster stars shows us a bright collection even amidst the glitter of the Milky Way. Inside it is a ruby-coloured supergiant contrasting with the blue-white super giants that surround it.

NEAF and NEAIC

Andy Blanchard

I am just nicely back from Rockland NY where I attended both the North East Astro Imaging Conference (NEAIC) and North East Astronomy and Telescope Show (NEAF). The imagining conference started on Thursday morning at the Rockland Community College. The organizers broke the astro-imaging into three steams, beginner, intermediate and if you dared experts, with keynote speakers scattered throughout the program.

I decided not to jump in too deep and attended most of the beginner lectures. Was I ever happy I did, as the instruction was great, and I came home with a ton of new stuff to try on my old images? While there most of the manufactures of CCD cameras and software produces had booths for attendees to handle equipment, ask questions and see what great innovations are just around the corner.

One new feature to MaximDL new version 5 software due to be released in June, will make it a lot easier to preprocess your images. Get this, all you need to do is put all of your images in one directory with your flats, bias and darks. Using astrometics, the program will segregate the images, and process the darks, bias and flats. When you wake up in the morning you will have each object in a separate directory ready for your processing.

That's right, every picture I took in Chile will be analyzed for time and star patterns matched to the appropriate darks and placed in a correctly named directory with other similar images and processed into master files. It identifies the object and names a file folder correctly using its star catalogue. I am still shaking my head, as this will save hundreds of hours of sitting at a computer.

On Saturday I attended NEAF, and to say I was a kid in a candy store is an understatement. The convention is also located at the college except this event is in the sports center. The picture above really does not convey the size of the show. There are at least 100 venders displaying hundreds of telescopes, cameras and every accessory you can imagine. Usually when I go to a trade show I am bored after one pass. At NEAF I went to every booth at last 5 or 6 times.

I came back with an interesting red flashlight, which has a hand crank to recharge the battery. It will also charge my cell phone for just $23.

I am already looking forward to next year's conference, and I would strongly recommend it to anyone who loves to go to the astronomy store. It was just a lot of fun. The highlight of the trip for me was the news that one of my pictures from the Atacama Desert in Chile will be highlighted on the Celestron and Hyper Star websites. The picture is of the Tarantula Nebula taken with Steve Barnes 40D and through Kevin Hobbs modified C14 and using my Hyper Star lens. I hope you like it.

Random Notes…

The Observatory roof is working again!

Thanks to the collective hard work of Andy Blanchard, Rick Cudmore and Paul Brandon, the roll-off roof on the Chilton Building is once again in working order. Anyone wishing to use the Trillium Scope is once again free and able to do so.

Getting pulleys was eventful. The quote at Brafasco was $67 a pulley. One major US supplier refused to ship to Paul Brandon because of export controls. He eventually found another US supplier who would ship to him. They arrived a few days later in great shape. Being galvanized steel, they are a little heavier than the aluminum pulleys that we had before. Regarding the company that refused to ship north of the border, Paul further noted that "What amazes me is they were made in the US and their website says they ship worldwide! My brother has used them commercially for years!"

Andy related that he counts 10 fingers and toes on this iteration. Although when Rick and he took it apart last month he did find out why there is a warning on screwdrivers to not hit them with a hammer. Seems they explode into sharp shards and make big holes in the operator's hand. Luckily the first aid kit is only 10 or 15 years old!

The Website:

Les Nagy sent along word that "I have finally figured out the problem with the website and it is back up. The forums are still not working but will be soon, too."

"X" Marks the spot.

Michael Boschat of Halifax sends along this observing note:

An item of interest is the "X" on the moon that can only be seen at certain times and at certain locations on the Earth, so timing is critical. This particular lunar illumination can be seen near the first quarter moon phase, and lasts for approximately three hours.

Below is a listing for the fully formed Lunar "X" illumination Dates and Times for 2008, using 1.2 sun elevation at crater Werner as the prediction parameter:

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May 12 1530 UT
Jun 11 0234 UT
Jul 10 1255 UT
Aug 08 2306 UT
Sep 07 0945 UT
Oct 06 2126 UT
Nov 05 1029 UT
Dec 05 0050 UT
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Photo (right) by Roger Hill. Taken from Hamilton Centre Observatory on January 25, 2007 at 8:20 EST, using the Centres 16" Ritchey-Chretien and a Canon 10D mounted at prime focus.

The youngest moon?

Taken from www.earthsky.org by Roger Hill

After the sun sets in eastern North America on May 5th, there's a chance to catch a razor-thin young moon less than 1/2 day past new moon.

You can't see a new moon because it's between the Earth and sun, and its dark side faces Earth. New moon falls at 12:18 Universal Time that day. That's 8:18 a.m. on the Monday morning for eastern North America. But as the minutes tick by today, the moon is moving in orbit around Earth, pulling away from the sun along our line of sight.

The record for seeing a young moon presently belongs to Mohsen Mirsaeed, who in 2002 saw the moon 11 hours and 40 minutes after new moon. Evening dusk marks the first time in years when it'll be possible to spot a lunar crescent that's under 12 hours old, but you have to be in eastern North America to catch it. There's even a slim chance of someone spotting a record-setting young moon in eastern Canada, from the provinces of New Brunswick, Prince Edward Island or Labrador.

As darkness falls across North America, the moon will be aging – pulling away from our line of sight to the sun – becoming easier to see. From the west coast of North America, the crescent moon is only 15 or so hours past new. Still, to see this very thin crescent, you'll need perfect sky conditions. You'll see a fatter crescent in the west after sunset Tuesday evening – near the planet Mercury in evening twilight.

You're always most likely to see the youngest of young crescent moons in spring. In the northern hemisphere, that's during the months of March, April and May. In springtime, the thin crescent moon tends to stand most directly over the sun at sunset. Therefore, springtime crescents stand higher in the sky at dusk and set later after sunset.

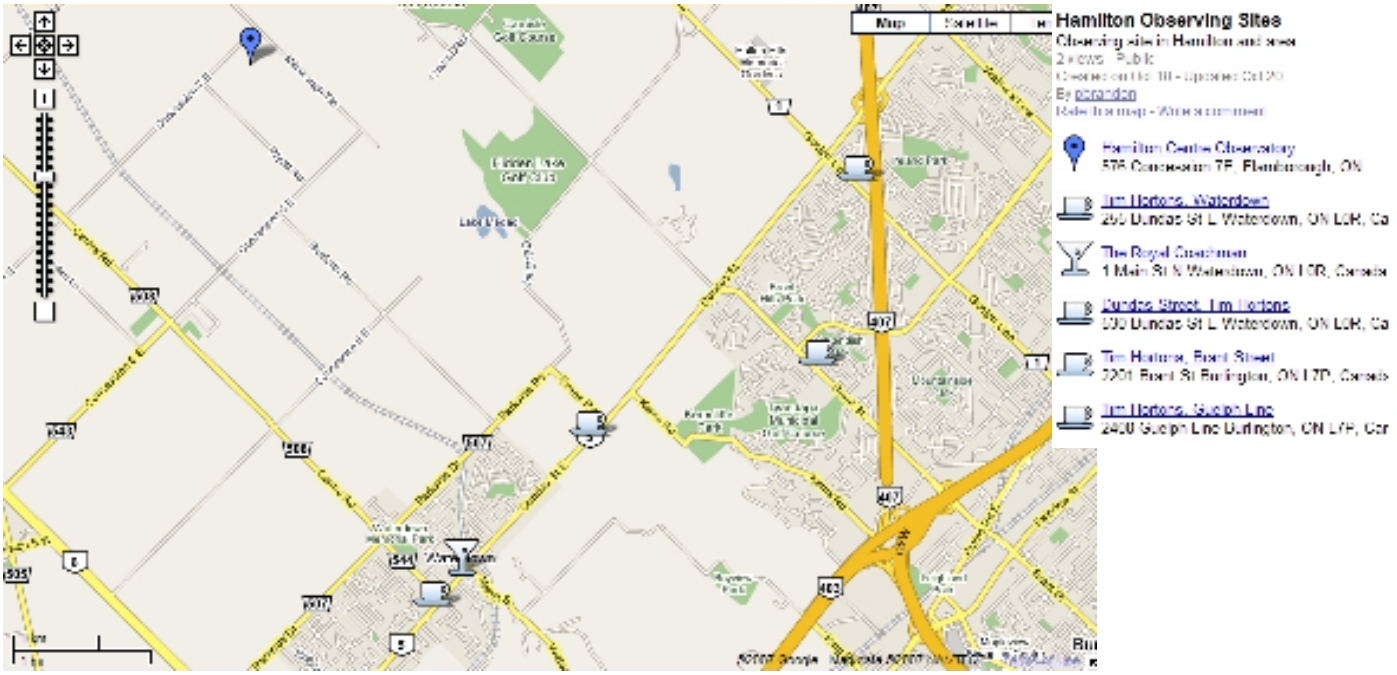
A good spot with a decent western horizon is on Milborough Town Line, above the Observatory site. We won't set a world record from there, but you could certainly have a chance to see a moon a lot younger than most of us have ever seen.

If anyone makes the attempt, let me know what happens whether you see anything or not.

Meteors!!

Eta Aquarid Meteors May 5th to 6th.

Normally one of the finest meteor showers of each year, the Eta Aquarid meteors were recorded as early as 401 A.D. by the ancient Chinese stargazers.....now we know them to be part of TWO debris clouds left in the wake of famous Halley's COMET through which the earth passes each year. Meteors can be seen from this shower all the time from April 21 through May 12, but the peak is fairly steep and occurs each year on May 4.....look for brilliant and spectacularly exciting fireballs from May 9 through 11, all of which will be seen dramatically in spite of this year's full moon on this date. The radiant for this meteor shower is located very near the star asterism known as "The Water Jar" in Aquarius, but moves a bit northeast each day through the long period the meteoric cloud persists around the earth. Note that this meteor shower for northern latitudes is very low in southern skies...most meteors should be seen coming from the EAST horizon (not overhead like most showers!) about 2 a.m.....but by 7 a.m., note that the most frequent meteors appear to originate about halfway from that point to overhead. On most dates with dark skies such as we will have this year, up to 25 Eta Aquarids might be expected, most bright and leaving glowing "fireball" trails behind them. This year, the moon will be new and absent from the sky and thus will not hamper observations; this is an excellent year to try to see this fine shower.



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The Frugal Astronomer builds a wedge.

Over the last few years, I've enjoyed myself building various things to make my astronomical life a bit easier, more convenient, or just increase the capabilities of my equipment.

Some have been successful, like my backyard observatory and the wedge that I made for my 12" SCT, others were less so, like the observing chair, and the tripod for my ETX.

While I am proudest of my observatory, I am very happy with the wedge I made for my SCT.

About four years ago, when I bought my 12" LX200GPS, it did not come with a wedge. I knew that eventually I would want one, as I had asked a number of people, but Steve Barnes in particular about whether a field-rotator might not be better. Steve told me that once you start to get above about 60° above the horizon, that field rotation units have a great deal of difficulty keeping up with the rapidly changing sky. So, a wedge it was to be, then.

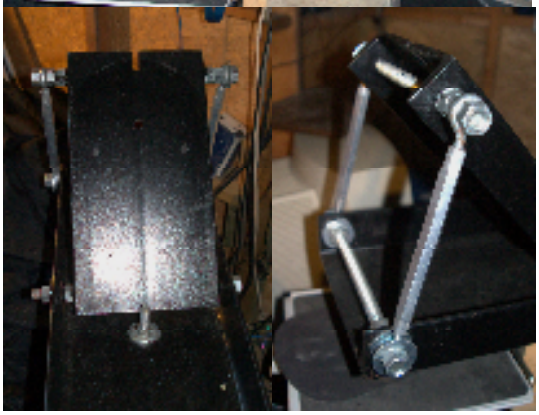
The requirement for a wedge are easy to understand, if not exactly simple to execute. It must hold a substantial weight on an incline without moving, and yet allow fine adjustment of the altitude and azimuth of the scope. I also wanted to be able to make it completely with hand tools.

Over some time, the design started to take shape. Two flat plates, a hinge at the bottom of the incline plate, and a pair of turnbuckles would allow the incline plate to change in altitude. I made the first one out of wood, to prove the concept, and, astonishingly, it worked first time. It did, however, suffer from a major drawback, one that Kevin Hobbs pinpointed when he saw a picture of it: "Do you have to re-do your polar alignment when the humidity changes?" he asked. Yes, actually, I had to polar align every night when I went out to observe. Obviously, I was going to have to get into metal work.

There's a chain of metal supermarkets in Ontario, called the Metal Supermarket (oddly enough), and they had what I wanted...rolled C-channel iron. I got a piece 18" long and 10" across the bottom that was the base, and another that was 15" long and 8" across that was to be the incline plate. Some 3/4" threaded steel rod, nuts to match and washers, and the turnbuckles from the wooden wedge, and I was ready to go.

What I hadn't counted on was that one of the major expenses was going to be drill bits. I had to drill, by hand, 8 holes in the side of the C channel. These sides were wedge shaped, so I had to drill over half an inch through in some spots. The pilot holes were fairly easy to do, but the large ones were not easy. There was a bit of math involved, using my rusty trigonometry skills, to figure out the distance between the hinge and the turnbuckles, and while I was off a bit, I managed to set it up so it would take me from Manitoulin Island to the Florida Keys, just by adjusting the turnbuckles.

To determine where the mounting hole in the base plate was to be positioned, I put the scope on the wedge, and put a piece of dowelling underneath, and noted where the balance point was. I also drilled hole in the centre of the incline plate, to allow the use of the centre bolt hole in the bottom of an LX200. In Texas, the scope was quite happy being held by a single bolt when I forgot to take the 1/2" bolt with me, but I wasn't. Fortunately, I was able to scrounge one up from an fellow attendee of the star party.



What was astonishing, is that polar alignment with this is so very easy. It turns out that adjusting one of the turnbuckles will shift the incline plate in two dimensions, almost as if it will twist it. So, the lack of any means to adjust the wedge in azimuth is not a problem, once you're in the right area. The other thing that this does is that the entire apparatus will start to bind, and that this is useful behaviour, as it locks the incline plate...particularly when there is 75 lbs of telescope attached to it.

I was asked a lot of questions about it in Texas, and Kelly Beatty, executive Editor of Sky and Telescope took a number of pictures, but I have yet to see any show up.

All in all, the wedge cost less than $100 to make, it took a weekend to build, and it's very solid. It does an amazing job of holding a very heavy scope rock steady.

Roger Hill