

Highlights

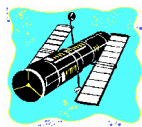
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- Pocket Astro Diary!

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Skywatch

Exploring the Final Frontier! A Newsletter for the Truly Outbound. Volume 8 • Number 2 March-April 1999



A Really, Really Cheap CCD Camera!

Surveillance Cameras in Astronomy...

As many of you know, I've (Rod) been working on a Cookbook CCD camera for the club. I hope to bring this project to fruition soon--if I can corral just a little more of that elusive 'spare time'! A Cookbook CCD imaging camera can now be 'done' for little more than \$500.00 (and a lot of sweat). There are now also several *commercial* integrating CCD cameras

available in the under \$1000.00 range. BUT...if you're mainly interested in imaging the Moon and Planets there may be a better (and cheaper way)!

I've been experimenting with video for astronomical use for about three years now. Most of my previous work in this area

involved using camcorders with undriven Dobsonian telescopes. My efforts culminated in some, in my opinion, truly spectacular images of the Moon, with one of these being published in a recent issue of *Sky and Telescope*. I also had some fairly good results with Jupiter. I could 'capture' the

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A typical PC-23C vidimage!

Great Red Spot as well as considerable atmospheric details. As you can imagine, I wanted some decent images of beautiful Saturn too. And it was here that my camcorder began to fail me.

The problem was *sensitivity to low levels of light*. While modern camcorders are remarkably good at delivering *usable* images in reasonably dim situations, there is a limit, as those of you who've used these vidcams to

tape night scenes know, to how 'low they'll go.' And Saturn, for my particular camcorder, a Sony CCD F-34 8mm job, seemed to be just beyond that limit. Oh, I could get some OK, *if rather small*, pictures of the **ringed wonder**, but even with Pat Rochford's 24" telescope, the images produced with my



camcorder were somewhat **noisy**

due to the relative dimness of Saturn. This became a real problem as I tried to capture *stills* of the planet and download them to my computer. Just too darned noisy! What to do? Well, I could always search out another camcorder. But consumer/prosumer cameras within my reach weren't much better (and some were worse) sensitivity-wise than my Sony. And as far as resolution went, the cameras which I could

realistically imagine owning were *no better at all*.

I did know about **Adirondack Video Astronomy**, a vendor who specializes in video gear for amateur astronomers. They had a camera which seemed just about **perfect**, the Astrovid 2000. Unfortunately, the price for this camera, \$600.00, was QUITE a bit more than I wanted to pay; especially when I couldn't be *sure* that the results would be

Prime focus (f10) video image of Plato and the Alpine Valley!

much better than what I had been achieving with my humble camcorder! And there the matter rested for some months.

And then I heard about **SuperCircuits** (<http://www.supercircuits.com>), a Texas company which specializes in 'surveillance' video gear--small, lightweight black and white 'closed circuit' cameras. An Internet buddy of mine mentioned that one particular model, the PC-23C

seemed like it would be perfect for use at the telescope. I visited the SuperCircuits web page and was impressed by this little camera's specs: a light sensitivity of .03 lux (smaller is better--the average camcorder has a lux value of 1-3), a resolution of 460 lines, and, above all, a price of \$99.99 without lens! I decided to take a chance and ordered the camera (which, while it is called the 'SuperCircuits PC-

23C' on the web page and in the company's printed catalog, turns out to actually be a '**Topica 505D**' when you receive it) and a little wall-mount 12 volt supply to power it! The camera also features a C mount style lens mount, so I ordered a 'C to T' adapter for it from

O r i o n Telescope

Center so that I could use my standard SCT photo accessories (since the CCD chip on the camera is a bit small, 1/3", I planned on using the camera mainly with a driven scope, my SCT).

The camera arrived in due time, and I was very impressed from the start. It was nicely finished, and, above all, *light!* I could see that it would *easily* be able to ride on the back of my Ultima 8 SCT! Dorothy and I tried

some indoor tests with the 'Topica' using an old Sony C mount zoom lens I had on hand. The sharpness of the picture and the sensitivity of the camera were truly amazing! I also noticed that the camera was equipped with a built-in microphone, which would prove handy for recording notes as to the date/time, etc. of the images being recorded. Unlike a camcorder, there is no way of 'printing' date/time on the images.

The first opportunity I had to use the PC-23C/Topica was at one of the first MAS Members-Only Star Parties in early 1998. Saturn was still visible, though rapidly sinking into the west! I set up the SCT, pointed it at the Sixth Planet and attached the PC-23C to the scope with an eyepiece projection adapter (a 'Tele-extender' in SCT parlance). Since these little cameras do not, of course, feature built in tape decks and viewfinders like camcorders, I set up a garden variety VHS VCR next to the scope. An old 12" black and white TV did yeoman duty as a monitor. The first thing I noticed was *exactly how small a 1/3" CCD chip is!* I initially had a DEVIL of a time getting Saturn in the frame! But I was finally successful, and called my fellow observers, Marv Uphaus and Betsy Hopson over for a look at a screen-filling Saturn! The results were not bad, really...though seeing was at best atrocious. While we had an occasional glimpse of a clear and detailed Saturn, most of the time it was 'waving' like a flag!

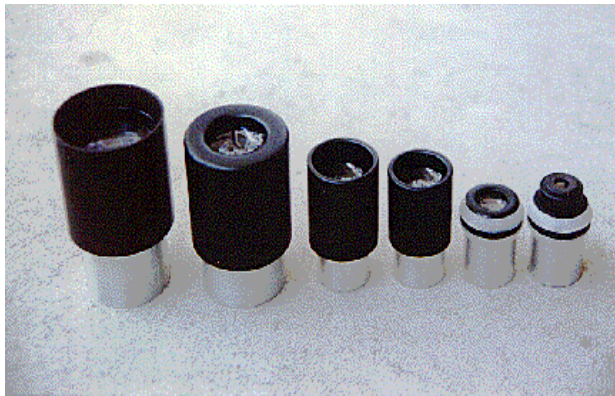
I don't think I have to tell anybody what kind of weather we experienced over the Summer of '98--all I need to do is say 'el Nino!' The result was that after this initial test my PC-23C sat on the shelf until December of 1998. With Saturn again well placed for imaging from my backyard, I decided to give my little camera another try. To tell you the truth, I was a bit skeptical. The seeing had indeed been bad on the one evening when I'd given the camera a quick checkout...but still...*how could a \$99.00 CCD video camera be expected to do much in the way of astronomical imaging?* I set up my SCT, aimed at Saturn, turned on the camera, and was **blown away!**

The detail I was seeing on my monitor was stunning, especially compared to what I'd been able to achieve with a camcorder. With the camera in an eyepiece projection setup using a 26mm eyepiece, the image of the planet was large, sharp and, above all, detailed! Not only was the Cassini Division a sharp, black razor-thin line, in moments of good seeing, hints of the Encke Gap (or at *least* the Encke 'Minima') were visible. The Crepe Ring was seen, as were details in the B Ring. The globe of Saturn showed off a dusky band as well as a polar hood! This was far, far better than I'd ever been able to achieve with my camcorder. To be sure this was not a fluke, I came back the next night, and, with slightly better seeing, was able to capture even sharper images of Saturn! With this kind of success with Saturn, I turned my video camera and my SCT to the Moon, and was

able, even on nights with so-so seeing, to image details that easily rivaled my **best work** with the camcorder and my 12" telescope.

With Mars getting closer and closer as its late April opposition approaches, I can hardly wait to see what details of the Angry Red Planet my PC-23C will ferret out! I just love it! I've also had considerable success imaging double stars with the PC-23C and think it will easily be capable of doing fine occultation work. For 'real' deep sky work, of course, you do need an 'integrating' CCD camera, a 'chilled' camera. But I think it's actually hard to beat video for the Solar System! The key to sharp images of the Moon and planets is 'grabbing' them in those rare instances when seeing is **absolutely rock steady**. This is hard to achieve with a 'still' CCD camera, but *very easy* with a video CCD camera. A video camera 'takes' 30 pictures every single second, meaning you're just about certain of capturing some sharp images over the course of an evening.

If you have the slightest interest in taking pictures of the Moon and planets, I suggest you give one of these little cameras a chance! They are inexpensive (SuperCircuits has recently reduced the price of the PC-23C/Topica 505D to \$79.00!) and very, very capable. For more sample images and some thoughts on doing 'astrovideography' visit my astrovideography page on the MAS web site at <http://members.aol.com/RM>



The Amazin' Rini eyepieces!

OLLISE/index.html. I'd be very happy to hear from anybody who'd like to try or is trying 'video at the eyepiece'!

--Rod

**Product
Review:
The Rini 38mm
Eyepiece!**

*My Astro Diary:
September 1998....*

***BAD Storms and
GOOD Eyepieces***

Hi Boys and Girls:

After battling the hordes in the local grocery for a few gallons of bottled water (the forecasters seem convinced that Hurricane Georges is headed for us here in Mobile), I arrived home from work much the worse for wear. It was therefore quite a treat to find a package from Paul Rini

(and the latest issue of *Sky and Scope* to boot) waiting for me. As some of you may remember, I enquired around about a Rini 38mm eyepiece some time ago, and, based on the

advice I had, I fired off a check for \$43.50 for this two inch eyepiece.

Opening the plain cardboard box revealed my treat. We're not talking glitzy packaging! What came out of the box was my eyepiece in a plastic baggy with no lens caps, no fancy documentation, and only a sticker on the side to identify it as a 38mm **modified Plossl**. There was, however, a nice handwritten note from Mr. Rini, which more than made up for the lack of 'slickness.'

The eyepiece itself? It was also very proletarian looking. No fancy rubber grip rings or eyecup. If you want to know what it looked like, think garden variety 25mm Plossl on STEROIDS! This is a serious looking eyepiece which sports a spaceship porthole-sized clear aperture! The barrel is made of aluminum while the upper housing material is black thermoplastic. It all seems extremely rugged, and while it is not exactly lightweight, it's quite a bit lighter than my 12mm Nagler Type 2.

Despite worsening weather, I set up the 12" in the backyard for a quick check of

my new toy. To come to the point right away, I was very happy with its performance on the few starfields the clouds allowed me. Perfect? No. Toward the edge of the field, my stars did start sprouting 'seagull wings,' but remember, this is an **f4.8 system without a coma corrector**. The apparent field seemed quite close to the claimed 64 degrees. It WAS indeed like gazing out the big glass porthole of a 50s style spaceship! Jupiter had finally cleared the clouds, so I steered the scope over his way. How was it? About like you'd expect: some lateral color and some reflection problems--but I obviously did not buy a **38mm** to look at the planets!

I'm happy, and looking forward to seeing what it can do under the dark skies of the Deep South Regional Stargaze next month. I definitely look forward to taking a look at the Veil with it. Oh, lest I forget, the eyepiece is not threaded for filters, but it is nicely blackened. OK, gotta tune in the Weather Channel and see if it's time to panic yet! **Night, all!....**

--Rod

**Across the
Universe of
Books**

***The Astronomical
Pocket Diary***

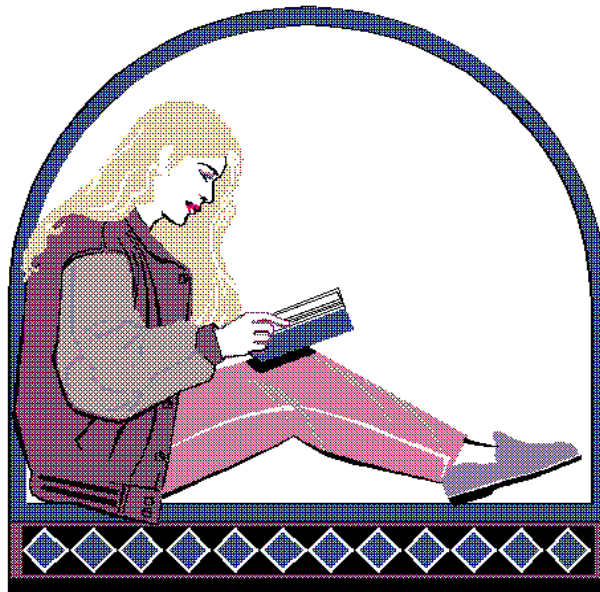
Good Things Come in Small Packages. That's an old cliché, for sure, but *sometimes true* nevertheless. I definitely found it to be accurate in the case of Norbert Haley's *The Astronomical Pocket Diary!* This book makes an excellent reference for the working amateur astronomer; especially the Solar System observer. And did I say 'small'? I meant *really* small--this little book packs a *lot* of information in its 3.5" x 5" format, and unlike many similar resources it will even fit comfortably in your eyepiece case!

I 'met' New Zealand's Norbert Haley online, and once I found out that he was the author of *The Astronomical Pocket Diary*, I asked if it would be possible for me to receive a 'review' copy, and mentioned that quite a few of *Skywatch's* articles have been reprinted in *The Reflector* and in Tom Clark's *Amateur Astronomy Magazine*. Even if the review I'd write of his book didn't get reprinted anywhere else, *Skywatch* has a pretty good circulation for a little club newsletter, and is now available online, meaning that I just *might* be able to get the word out on this Kiwi publication in the U.S! Norbert assented, and it wasn't long before the Pocket Diary was on my doorstep.

My first impression of the book was that it is quite

professionally printed--especially as small time astronomy publications go. Typography is clear and legible, even under a red light (the text is, it must be mentioned, a little small for my 45 year old eyes, but it is meant to be a *pocket diary*, after all). I was also given an impression of 'high density' by this pub! This little calendar packs *quite* in information punch!

But what exactly does the *Pocket Diary* offer? Flipping over to the back cover (the *Diary*, by the way, comes slipped into a nice clear plastic cover, which should help ward



off dew), we find the following features being touted:

Daily phases of the Moon, size and declination info.

Rise, transit, setting times and angles calculated for your location.

Astronomical events (eclipses, meteor showers, etc.).

Animated horizon star maps of the morning and evening skies.

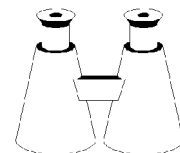
Exact times of occultations of stars by the Moon.

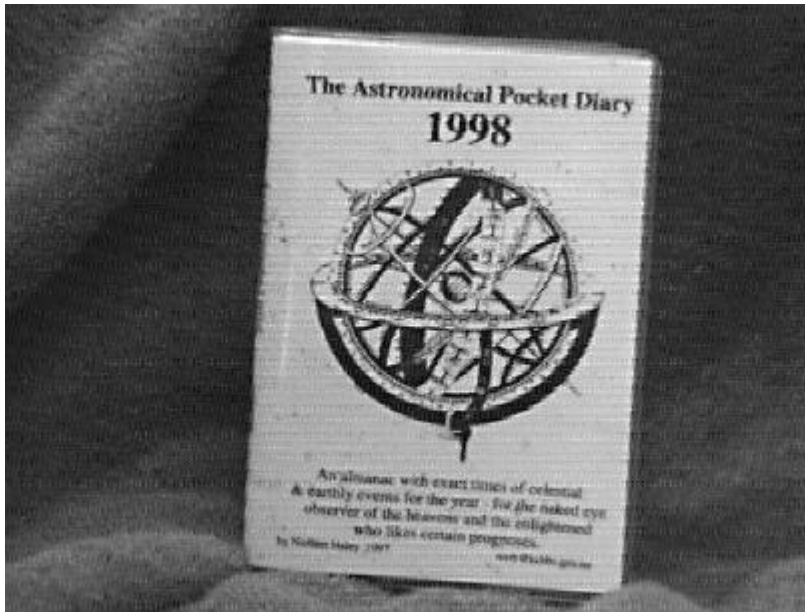
Anniversaries, VIP birthdays, civil and religious holidays and festivals.

Spanish, German, Italian, French and Greek editions.

Custom editions available.

Quite a list! Where to start? Why don't we look at March 1st? The first thing you'll notice is the large date numeral printed over a graphic representation of the Moon's phase. This graphic is large enough for you to get a good idea of Luna's phase, and glancing over to the days





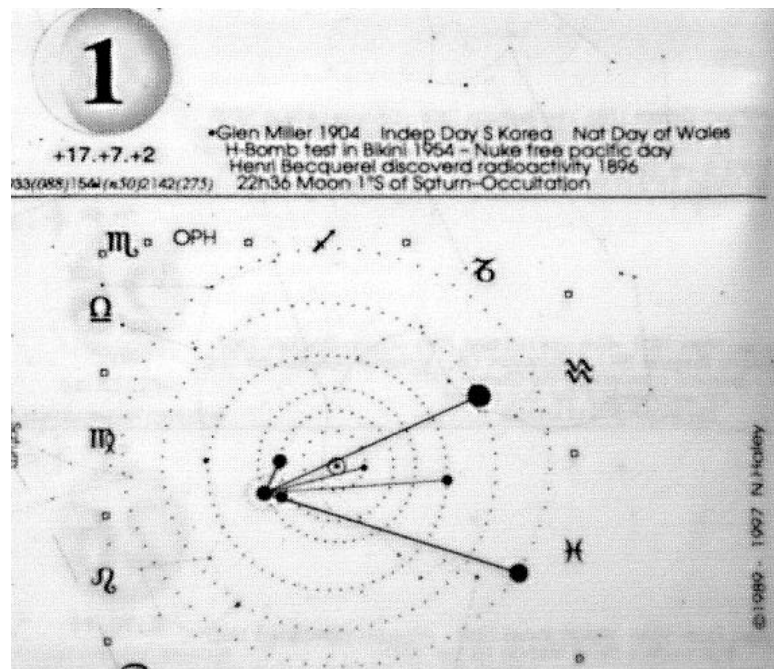
on the facing page, it's easy to see whether the Moon is waxing or waning. But it's really not necessary to rely on the graphics--as we'll see, the Moon's complete 'condition' is always spelled out for us! Below the Moon we find a series of numbers. Beneath the 1 March Moon picture, for example, we read '+17.+7.+2'. Somewhat cryptic, I'll admit, but actually easily understood. What these figures mean is that the Moon is **17%** illuminated and waxing ('+'), it is at **7%** of its distance range and coming closer (again, '+'), and is **2** north of the celestial equator (+=north, of course). Pretty snazzy. We know a lot about the Moon's current state from one little graphic symbol and a few numbers! Want to know **more** about what Luna's doin'? The next line is another series of numerals and symbols (in a very small font--I understand that space was at a premium given the small size of the calendar, but some of the fonts the author uses

really are too small... I had trouble making them out in the light of day while wearing reading glasses!). Be that as it may, I was able to decipher '0933(088)1541(n50)2142(275)' for 1 March. This indicates that the Moon rises at **0933**

hours at **88** from true north, that it transits the local meridian at **1541** hours at an altitude of **50** degrees, and that it sets at **2142** hours at **275**. Again, an absolute wealth of info in just a few characters--I just wish they were a little easier to read!

Now is a good time to talk about locations. Obviously any calendar dealing with specific astronomical events will only be accurate for a fairly narrow range of geographic locations. The author can provide a sheet of 'conversions' for your area, and also may be able to provide you with a 'custom' edition for your location (or even one with birthdays of friends, etc. printed on the appropriate days!). *Contact Mr. Haley for further details.*

Continuing on with March 1st, above the Moon picture/date for each day we



A representative Page from the Diary....

find a graphic representing high and low tides for the date in question. The author mentions in his explanatory matter that the tide/times are only available in 'some editions,' this is not a bad thing since most astronomical observers will probably not consider this information vital. It was certainly not a big loss for me, as some of the symbols used for tide conditions were so small as to be illegible--with my eyes, anyway.

Going back to the Moon graphic, you'll find that on certain dates occultations are marked with times given. If the event takes place when the moon is very low, the author has helpfully done the characters for the occultation time in grey, alerting us to that fact. This will be a major attraction this calendar for occultation chasers/fans!

Below and to the right of the Moon graphic/date, we find the events for each day listed. On March 1st, we see that the Moon is 1° South of Saturn at 22:36 (for the location of this edition of the calendar). Browsing through the days, you'll find that most major astronomical events--meteor showers, moon phases (bold), solstices and equinoxes, etc.--are noted. In addition, the calendar is replete with MANY 'earthly events:' birthdays of prominent figures, anniversaries of historical events, etc. This was one of the few things I *did not* like about the *Astronomical Pocket Diary*. Most of us have other calendars which do an adequate job of alerting us to these dates. When I'm

thinking astronomy and paging through the days to see what interesting events are in the offing, I really **don't** have any desire to be reminded of when the U.S. Civil War ended or when Miles Davis and John Wayne were born! I would prefer to see the events confined to those of astronomical significance. A benefit of eliminating these non-astronomy happenings might be that the astro events could be presented in a larger font, making them easier to read. If more events than those relating to what's going on in the sky are desired, I'd rather see just 'space' related dates like those featured in the online JPL Space Calendar.

The *Pocket Diary* does a pretty good job with the Moon and astro events, but what can it tell us about the configuration of the starry sky? Well, those constellations printed as the background of each page are not just for decoration! The constellations on each left hand page are those visible above the western horizon an hour after Sunset. Those on the background of righthand pages represent the constellations visible above the eastern horizon an hour before Sunrise. Clever, very clever!

Continuing on, beneath each Sunday (always on the left-hand page, but, curiously, the day of the week--Sunday, Monday, etc.--is one of the few bits of information the calendar doesn't tell us) we find a graphic representation of the Solar System. This 'Orbitgraph' gives us a view of the Sun's family from high above the ecliptic. In addition to giving you the position of the planets in their orbits (which

can be ANIMATED by flicking the little book's pages to show you the movements of the planets!), the Orbitgraph, can also be used to locate the actual planets in the sky by aligning the diagram with the real heavens per instructions! How well does this work? Apparently pretty well. But I had a problem at first!

The Orbitgraph, and, upon closer examination, *the whole calendar*, seemed distressingly 'off' in all its information and predictions! **Nothing**, not the positions of the planets or the phases of the Moon matched **reality**! *Nothing* was accurate. Then I realized what was wrong...the author had sent a review copy alright, a copy of the **1998 edition** (it says '1998' prominently on the cover, but I guess this hadn't registered)! I had just assumed, from what Mr. Haley told me, that I'd receive a **misprinted** or **leftover Auckland edition** of the 1999 calendar. Obviously I misunderstood! I've received quite a few yearly publications of this sort to review for *Skywatch* or to share with the club, and this is, I must say, the first time somebody's sent me last year's version!

And truthfully, having a current copy would have made the job of reviewing this little work a bit easier. I was able to check the *Diary's* accuracy and the efficacy of the Orbitgraphs by using computer software to view last year's sky (accuracy seemed quite good). But, in truth, not being able to use the *Astronomical Pocket Diary* for actual observing made it a little difficult for me to give

the book a good evaluation as to its usefulness *in the field*. It really does offer a great deal of data (including a good bit more than I've talked about here), and from my browsing of it indoors it *seems* to me that it would be a good tool, especially for you Solar System nuts out there. I'll give it a **conditional 'pass,'** but I would have liked to have been able give this nice little effort my *un*conditional approval. Without being able to use it on a night to night basis in the real world, though, I'll have to limit myself to saying: "It **looks** pretty darned good!"

For further information on the *Astronomical Pocket Diary*, including prices and custom editions, contact the author, Norbert Haley, directly at:

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Poste Restante,

Auckland, New Zealand

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<http://members.tripod.com/adm/popup/roadmap.html>

--Rod



O v

er the

years I've purchased a lot of "astro-things". From how to manuals, to components, to complete telescopes and mounts. Most always, if I hadn't actually seen or used one that belonged to someone else, I was at least able to talk to someone I trusted to find out if it was a good buy or if it should be left alone. I do not claim to be an engineer or an advanced ATM, but I have built many telescopes, all very useable and three of which I presently own and use. (I also built the observatory that houses them.)

Last September, I took a chance and ordered an equatorial platform kit without having ever seen one or talking to anyone who owned or used one. I read the literature (on the Internet) and spoke with the owner by phone more than once to make sure I understood what I was ordering. I made it very clear to the owner the type, size and weight of my telescope and he made it quite clear to me that this kit would do exactly what I needed - to track a celestial object (for visual use) for about an hour at a time with a 90 pound scope. What I received was not what I was promised. The review that follows begins with **suspicion** from the moment I opened the box of parts, to **disappointment** when I attempted to use the platform, to **anger** at being misled and finally **resolve** to accepting a bad situation and the decision to make the best of it.

The kit, advertised to handle up to a 200 pound telescope, sells for \$249 (with the controller already

assembled) plus shipping. It arrived about two weeks after I ordered it via UPS. Upon opening the box, I found all the parts to be there, but they appeared to be awfully lightweight for a 200lb telescope! Also, the instructions left a lot to be desired. I decided to give it a go anyway and went to Home Depot to purchase the wood. (a 2' by 4' piece of 3/4" plywood and a short length of 1" by 4" hardwood)

At this point I suppose I should mention that this particular platform is based on a 1977 design by a French amateur named *Adrien Poncet*. The platform works by having a board rotate on an axis perpendicular to that board's plane. This is accomplished by means of a pivot on one end (south) and two sliding bearings on the other (north). The sliding bearing boards, one attached to the ground board, one to the top, are set at an angle to match the observer's latitude. When motorized and facing Polaris, the platform will counteract the Earth's movement. This design, unfortunately, only works for small telescopes and cameras. Had I known this, I



The platform before modification

would not be writing this review right now!

The assembly of the kit, once you figure out the directions, does not take long. Two pieces of plywood, each 2' by 4', and two pieces of 1" by 4" (each 2' long) are the material that you need to supply. As mentioned above, the top board uses a pivot pin and socket on the south end and the pair of one by fours sliding against each other on the north end. One of these sliding bearing boards is covered with a linoleum type material and the other uses two furniture sliders. The angle of the boards is set to your latitude by means of adjustable brackets. A tee hinge, connected to the top board (north side) acts as a tangent arm and is driven by a length of 1/4" threaded rod turning through a block of plastic. One end of the rod is connected to a stepper motor mounted on the ground board. The controller runs the motor

in either a tracking speed or a faster, rewind speed. Fine adjustment to the tracking speed is accomplished by a potentiometer. In theory, the top board will rock back and forth through an arc of fifteen degrees

In **reality**, this is not

necessarily the case. Several problems became apparent the first time I placed my 12.5" F/6 Dob on the platform. The first obvious thing was the compression of the top and bottom boards, resulting in a major loss of tracking time. About half actually. The advice from the owner was to position the scope further back (south) on the platform to put more weight on the pivot. I did, as far as was possible, but this did not help the situation. The second problem was continual motor stalling. "Slide the telescope to the east slightly" I was told, to keep pressure on the coupling (which connects the drive shaft to the motor). This didn't work either. The motor just didn't seem to have enough torque. No matter what I did, following the advice of T. L. Systems, I could not get the platform to



Side view showing 'sliding board' arrangement and the latitude adjustment brackets....



Closeup of the original motor, bracket and T hinge...

work with my scope on it. Actual tracking on an object was out of the question at this point.

After several weeks without success, I decided to let Rod Mollise, my observing friend, try his luck with it. Perhaps I was missing something and maybe someone fresh to it could solve the mystery. The results Rod had were essentially the same. At this point I decided to ask for my money back, even offering to send the entire platform, wood and all. I was told that T.L. Systems 'did not have a return policy.' (A mistake I won't make again ... if there is no return policy, I will not order to begin with. Lesson: Ask.) The owner did state that if I shipped it to him, he would return it in working condition. I had my doubts

that **anything** could help this, but I didn't have much to lose at this point.

I received it back promptly with the statement that it "tracked flawlessly (for an hour at a time) for two days with a 95 pound scope on it". The only changes I could see were that the lower bearing board was moved forward slightly (to help the short "tracking" period) and it now sported a larger motor. Rod and I immediately put it to the acid test the first clear night. The results were, (1) it did in fact rock now, although it would not track and (2) the "hour" of tracking was actually 23 minutes. On our third attempt at making this work (actually rewinding from the second attempt), the telescope came crashing down as the top board of the platform popped up on one side. My thousand

dollar binocular viewer was the casualty in this incident. At this point I decided the best use for the platform would be in the fireplace!

As it turns out, the platform was too big to fit into the fireplace. If I was going to have to "modify" (cut it into smaller pieces) it to get it into the fireplace, I might as well attempt to modify it into a working platform if that was possible. The following are problems and fixes I've made to the platform.

(1) The most dangerous problem is the instability of the top board. By design, the position of the telescope is critical if it is to track at all. It is necessary to move as much of the weight over the pivot as possible to minimize the compression of the bearing boards and it is necessary to move the telescope to the east side of the platform to keep pressure on the motor coupling to prevent stalling. In doing so, the center of gravity shifts dangerously close to the southeast edge of The platform. Since the top board merely rests on the pivot and bearing boards, there is nothing to stop it (and your telescope) from taking flight once this condition occurs. By adding a small length of small chain to each end of the bearing boards (attaching the top board to the ground board) the top board becomes captive and the spilling condition goes away. Also, by attaching a stout spring

between the top and ground boards at the pivot, the assembly becomes less prone to separate on that end.

(2) The Poncet design, as mentioned, is very sensitive to weight, which causes the compression of the bearing boards. This is the reason for the short "tracking" time. The only way to stop the compression was to support the top board without interfering with its rocking movement. I attached a pencil to each side of the top board and scribed the arcs made as it rocked. These arcs were transferred to wood, cut out and attached to the underside of the top board. I then mounted rollers (upside down) on the ground board directly under each arc. The top board now rocks through the fifteen degrees it was intended to, even with a hundred pounds of weight on it.

(3) Due to an undersized motor bracket, there was an unacceptable amount flexure when moving the telescope about the sky. The upper board would spring as much as five or six degrees while trying to center on an object. I remedied this by using an opposing corner bracket against the motor bracket.

(4) The problem of the motor stalling was corrected by three steps. First the undersized motor was replaced with a larger one by the owner when I sent the platform back to him. Secondly, even though the new motor produced more torque, it continued to stall. The tangent arm (tee hinge)

would draw in toward the upper bearing board and then bind the drive shaft at the coupling. This was corrected by placing a bolt through one of the holes in the hinge (butting up against the upper bearing board) to act as a stand off. Finally, a tremendous amount of radial movement was introduced into the drive shaft by a poorly designed, home-made looking coupling. The solution to this was a flexible, neoprene coupling from McMaster-Carr (about \$10). This was the most expensive part of all these modifications.

(5) Finally, now that the platform was actually able to track, there was still the problem of the bearing surface. The lower bearing board used a cheap, linoleum type material (called Pyronite) that stuck against the furniture sliders on the upper bearing board. As the drive shaft turned and advanced the tangent arm, the platform would stick and release, stick and release ... the result being an object that would drift out of the eyepiece field of view and then leap back, over and over again. The owner insisted that a good coat of furniture wax would remedy this problem, but no matter how much wax was applied, the problem would not go away. The fix was easy - I replaced the Pyronite with ebony star formica. The problem went away immediately.

(6) The last weak point was the block of plastic (drilled and tapped) attached to the tee hinge which the drive shaft turns through. This was already beginning to wear to the point where there was play between it and the drive shaft.

The fix here is to replace it with a more durable material like aluminum.

I now have a fairly stable platform that will track for about an hour without binding. There is a very slight amount of spring still there, but not really a problem when used visually, and only a little annoying when using a video camera (with its small ccd chip). All of these corrections could, I believe, be incorporated into the kit without adding much cost. I actually enjoyed the challenge of making this work with my telescope. Had the brochure indicated that it would handle a six or eight inch scope as designed, but would require modifications for anything heavier, then I wouldn't have the ill feelings towards T.L. Systems that I have now. (That and a price of about \$125 instead of \$250.)

I am all for any product that ads to the enjoyment of amateur astronomy. I am particularly appreciative of a product that is affordable to a wide range of people. With a change of design and *attitude*, the T.L. Systems equatorial platform kit could be that kind of product.

--Pat Rochford

MY BACK PAGES-MY BACK PAGES-MY BACK PAGES



AstroPoem
One Little World

*One look into deep space
Refreshes my soul
and gives me a little hope!
If only all could see
As we do
Into the chill
Outer Darkness
And contemplate our
One, tiny speck
Of A world!
A little world
We share with
Our brothers and sisters!
No more hate.
No more bigotry!
Oh, my hope stays alive
If only as a dim flame,
Dim as the farthest star....*

--Rod

Editor's Musings:

**Once Upon a Midnight
Dreary**

The MAS is planning a 15 year reunion to be held on 15 May 1999! This will involve a BBQ at Ginny and Tony

Kramer's house as well as a group observing session at the ESC! Contact Ginny (ginnyorion@aol.com) for details!

Barry Simon has asked Ginny Kramer **"...to ask those who attend the DSRSG if they have any ideas for new regulations and rules, if they do, have them send them to me and Barry; Toni and I will go thru them and print new ones during the year (Ginny can be contacted at the above email address)."**

The following is from new SERAL Chairman, Mike Benson...

Greetings. Much has occurred since the SERAL Annual Meeting in St. Augustine on October 3, 1998. At that meeting Jerry Barton officially resigned his position as SERAL Representative and Dennis Culver vacated the Chairmanship to take the Rep position. Following the resignation of Ton Ponjee as Secretary, Roger Curry of the Northeast Florida Astronomical Society was elected. That left all positions filled/

However, by the end of October, health problems resulted in Jerry's resignation of the Chairmanship and shortly after that Dennis had to vacate the Rep position for personal reasons. That left me, as Vice-Chairman, in temporary charge. Ginny Kramer of the Mobile Astronomical Society offered to take the Representative position and Dennis said he would serve as Vice-Chairman for the next few months until we can have a new election at the 1999 Annual Meeting in October at the Mid-Atlantic Star Party. I accepted both offers with much pleasure.

At the 1999 meeting, the Chairmanship will need to be reaffirmed for the year remaining on Jerry's term. The Vice-Chair will come up for election for a two year term. The Treasurer/New Horizons Editor will also be due for election for a two year term. The Secretary will be as is until the 2000 meeting. The Representative's position will need to be reaffirmed for the two years remaining of the three year term.

Those interested in filling any of these positions should contact me in the next few months so that your name can go on the ballot.

Happily, there is no pressing regional business, so all these new folks are going to have a bit of time to settle into their new positions and to see if they want to stand for election in October. The biggest issue, as always, is facilitating communication between member clubs within the region, assisting potential new AL

members and keeping the national Astronomical League informed of our activities. Appended is a list of the current officers and ways to contact us:

Chairman: Mike Benson, Barnard-Seyfert Astronomical Society, 2116 Crystal Drive, Nashville, TN 37210-3333. Phone: (615) 883-6571. FAX: (615) 902-0465. E-mail: Ocentaurus@aol.com

Vice-Chairman: Dennis Culver. VonBraun Astronomical Society, 38 Noland Avenue, Fayetteville, TN 37334. Phone: (931) 438-0359

Secretary: Roger Curry, Northeast Florida Astronomical Society, 2321 Camden Avenue, Jacksonville, FL 32207. Phone: 904-398-1335. E-mail: rcurry@mediaone.net

Treasurer/New Horizons Editor: Tom English, Cleveland County Astronomical Society, Williams Observatory, Gardner-Webb University, Boiling Springs, NC 27017. Phone: (704) 434-4433. FAX: (704) 434-3917. E-mail: ngc@gardner-webb.edu

Regional Representative: Ginny Kramer, Mobile Astronomical Society, 1053 Linlen Avenue, Mobile, AL 36609. Phone: (334) 341-5611. E-mail: Ginnyorion@aol.com

If any of the officers can be of assistance to your club, please feel free to contact us. We are here to serve the amateur astronomical needs of the region. Clear skies.

-- Mike

One Mardi Gras afternoon, my little daughter ran into the house proclaiming, "There's a float going down Selma St. with Beavis and Butt-head on it!"

"That's fine, honey," I said, "You mean a float with people dressed up like Beavis and Butt-head on it."

"No Daddy, the REAL Beavis and Butthead."

Intrigued I hurried out front. Indeed, it was a float...a disreputable sort of float, cobbled together for the Joe Cain Procession, perhaps. And riding it were the real Beavis and Butthead! It must have been the spectacle of those delinquents riding a float which addled my mind, but I couldn't resist that time-honored cry: "THROW ME SOMETHIN' MISTER!!" And throw they did, a hermetically sealed mayonnaise jar which impacted my head! When I recovered, I saw that it contained a new...

Rumours

Well this isn't a rumor anymore, but maybe you've been in a dark cave for the last month or so...Meade is releasing a new version of the ETX, the ETX-90EC, which features dual axis drives and a little optional computer, the Autostar, which gives this tiny 90mm scope most of the abilities an LX-200: goto (the database features thousands of objects) and an altazimuth tracking mode. As I write, Meade has just begun releasing the Autostar. Early reports are that it DOES work as advertised! I say 'hurray' for Meade...now if they can only exercise enough QA to keep returns from disgruntled beginners low!

What happened to those big, lightweight Stabilite mirror blanks which were supposed to rule the big dob world by now?! We were hearing a lot about this supposed breakthrough about a year ago, but neither Starmaster nor Pegasus, who were both supposed to be usin' 'em are saying a word about 'em now! What gives?

Almost fact, though the Anonymous One has not yet seen an 'official announcement,' are the new TeleVue Nagler Type 4s! These new eyepieces which are smaller and lighter than the 12mm and 20mm Nagler 2s they're replacing, contain two fewer lens elements. They are also said to better the Nagler 2s as far as performance. Will most of the Naglers become 4s? We'll have to wait and see. As yet, no info on prices. And what's a Nagler Type 3 if these are 'Type 4s?!'

This Just in gang: "All Celestron Dealers effective today, 2-15-99, have "a-la-Meade" pricing, unified national prices." Hmmph! While this is being touted as a 'benefit' to both Celestron dealers and customers, doesn't sound exactly consumer friendly to this old hippie! This is just what we've dealt with with Meade for years. For the dealers, very small margins. For customers, 'price fixing' ...no chance of getting a deal anywhere! Is this a symptom of Celestron's Tascification?!

Little light this time due to the Mardi Gras holidays...hope you'll pardon the Anonymous One as he now retreats into a darkened corner to ease his ever-lovin' achin' head!!

--The
Astronomer

Anonymous





Talk about STUPID cigarette ads! Aliens are invading and Goober here is using his Meade 4.5" to look at his bellybutton! Got his finder on backwards too I notice! Way to go Doral!!

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