

## THE COMET'S HERE! ARE YOU READY?!

### *The Great Comet of 1997!*

**A**re you really ready? For Comet Hale-Bopp, that is. The sudden appearance of the spectacular Comet Hyakutake at this time last year caught a lot of us unawares and unready to take full advantage of its apparition. Well, we've had a year to prepare ourselves for the next Great Comet, and I hope that we've used that time to our advantage. What exactly do you need to do to 'get ready' for the passage of the comet? What new equipment do you need to acquire? What old equipment needs to be checked-out? A lot depends on what your goals are. If you merely want to enjoy the comet visually, you'll obviously need a lot less equipment (and skill/practice) than you'll need to do prime-focus photography of our visitor, for example. Following, you'll find what I feel are the bare minimums of equipment required for each level of 'Hale-Bopp involvement.' Things are happening rapidly; in fact, you should

be out observing and photographing the comet now! But there is still time to add that last piece of gear or new technique to your observing kit before it's too late!

The main weapon in the visual comet observer's arsenal is a decent pair of binoculars. While I had some lovely views of comet Hyakutake through a variety of telescopes, I'll have to admit that my best views of this beauty really came from my (very) modest 10x50 binoculars. These Wal-Mart specials only cost \$39.95, but gave surprisingly good images, and I imagine I'll be using them for a long time to come. The catch with bargain basement binoculars, though, is that you have to check them out very carefully in the store and be prepared to return them after you star test them. While I tested my Simmons binoculars very rigorously before paying for them, a star test revealed them to be out of alignment (double images on stars no matter how I adjusted them). I took them back and exchanged them for another pair which proved to have excellent wide-field optics. Returning the original pair to Wal-Mart was no problem. The sales clerk had absolutely no idea what I was talking about when I explained what was wrong with the glasses, but was only too happy to let me exchange them.

Have you been lusting after a pair of 'real' binoculars? Fuji 16x70s, perhaps? Or maybe an 11x80 'giant' pair? Perhaps something even larger? This might be the time to take the plunge! I just hope you haven't waited

too long. During the short reign of Comet Hyakutake, several retailers--Orion for example--ran out of just about any type of binocular suitable for astronomical use! As for me, I'll stick with my el cheapos. I do love the views offered by binoculars, but not enough to spend money that I could use for a new Nagler, another camera, etc. This, of course, is personal taste; I certainly wouldn't dream of criticizing the observer who decided to invest in a really good pair of binoculars!

Another option is a rich field (short-focal-length) telescope. You may already have one of these lying around. That long-neglected Odyssey 8 f4.5 qualifies, and would provide spectacular wide-field views of Hale-Bopp! But when we speak of rich field telescopes, most people think of Edmund Astroscans or one of the new, small, short-focal-length refractors like



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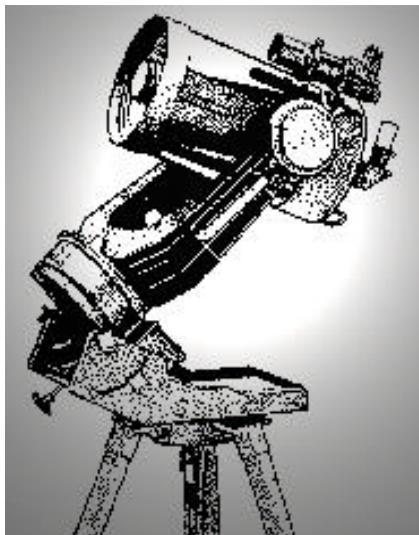
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the Televue Pronto or Ranger. Any one of these telescopes will provide wonderful (sometimes almost unbelievable) visions of the comet. The hang-up is cost. The cheapest option is the Edmund Astroscan, the archetypal rft, with the red 'bowling ball' OTA. The Astroscan is a decent little telescope, and comes with a wealth of documentation to aid the new user, but I've never been overly impressed with any of the Astroscans I've looked through. Even allowing for the short f4 focal length 4" mirror, the images in these cute little telescopes have never--in my opinion--seemed up to par. I think I'd enjoy using an Astroscan for comet observing, but I'm afraid that it would probably be stashed away in a closet afterwards.

After the Astroscan, prices escalate rapidly, beginning with the TeleVue Ranger and inflating to the rather *substantial* price tags on the Genesis (TeleVue) and the Astro-Physics Traveler. There is *no doubt*, though, that these refractors would perform wonders on Hale-Bopp. But if you don't have one of these jewels now you'll probably never get one in time to use it on Hale-Bopp. It's not uncommon to wait months for one of these superb little telescopes to arrive. Lower down on the refractor food chain we find the Short tube 80 and the RF 80 from Orion and Celestron respectively. These achromatic refractors both garnered excellent notices in *Sky & Telescope's* recent review of rfts (they also reviewed an Astroscan which basically received a thumbs down). I'm also hearing positive word of mouth on these two telescopes. If you run to the phone with credit card in hand, I think you might get one delivered in time to use of Hale Bopp. And before you rush out and buy something new, don't forget your normal or long-focal-length

telescope. Focal reducers and long-focal-length eyepieces can buy you a lot of extra field for comet enjoyment!

Finally, if absolutely nothing else is available, some department store/garage sale 60mm refractors (and 4" reflectors) are capable of delivering fairly nice images--if they are equipped with a decent after market low power eyepiece (.965" good quality eyepieces are available from Orion and a number of other vendors). These little telescopes *can* provide a nice supplement to a pair of binoculars, but



BEWARE! In recent times, I've noticed that department store refractors--which were never noted for quality--have become worse than ever, with the cheapest examples using single element objectives stopped down to 30mm or so! Specifically, I'm hearing that Tasco is much worse than they used to be (though I notice that they are now offering 1.25" eyepieces with some of their little scopes, so who knows). Some of the Chinese outfits (Simmons) may offer slightly better quality at slightly lower prices. Again, BEWARE! These generally execrable telescopes may provide good emergency telescopes if nothing else is available, but they are not something

you would want to invest a lot of time and money in!

What's required as far as charts maps, books, etc.? Very little. You certainly don't need any sort of star chart to locate hale-Bopp now--just look up! A finder chart for the comet showing its path across the stars day by day can be nice to have, though, since this will show any juxtapositions of the comet and deep sky objects, stars, etc. I've provided a chart of the comet's path over the next month in this issue of Skywatch. Good charts can also be found in *Sky & Telescope* and *Astronomy* magazines and on Sky Publishing's World Wide Web Site. If you'd like a nice general interest book on comets, try Carl Sagan's *Comets*. Yes, I'm very well aware that Alan Hale has already produced a book on the comet, *Everybody's comet: A Layman's Guide to Comet Hale-Bopp*, but I'm waiting to see if a revised edition is issued after the comet's passage, increasing its 'souvenir value.'

About all that's required for basic photography is a camera capable of having its shutter held open for 30 seconds - 2 minutes or so and a sturdy tripod. A single lens reflex camera is preferred over a range-finder type, since with an SLR (or, of course, a twin lens reflex also) you can actually focus on the stars rather than having to rely on an infinity mark which may or may not indicate actual infinity focus. You'll also need a cable release to allow you to trip the shutter and lock it open in 'B' position without jolting the camera. Make sure your tripod is steady enough to hold the camera still when the shutter is tripped (though, with care, even a K-mart tripod will *work*). And naturally you'll need film. Generally, use 400 speed color or black and white for light polluted environs. If you have reasonably dark

skies, you can experiment with fast color films (1000 and up) and high speed black and white (T Max 3200, perhaps or T-Max 400 exposed at as a 800). In reading the astronomy magazines, you'll see a lot of opinions on which are the best films to use. To some extent this is a matter of opinion. But it is true that some films are just better suited for astrophotography than others. As for myself, I'll be trying the new 'PPF' pro color print film from Kodak for color prints. I would also suggest the Kodak amateur Gold films. Black and White is more problematic. Many photographers will tell you that *only* hypered Tech Pan will provide the proper combination of speed/grain. Well, maybe. I've gotten very good

camera results with it. However, since this is a once in a lifetime opportunity, I'll admit that it might be a good idea to pick up that phone and order a roll of hypered tech pan from Lumicon if you want to shoot black and white.

The basic procedure for photographing the comet with a fixed camera is simple: choose a focal length of lens based on the length of the comet's tail. If it has a very long tail like Hyakutake, a 50mm 'normal' lens is a good choice. Next, frame the comet in the viewfinder (try to include a nice bit of landscape--a church steeple, a bridge, a skyline, etc). Then, focus carefully on a bright star, and expose. In heavily light-polluted areas, try a series of exposures on 400 speed film

beyond simple fixed camera photography and achieve some very nice results without spending any money at all (or very little anyway), by building a 'barn-door' camera tracker. This is a simple camera mount, made of wood, which can track the stars and allow you to make guided exposures of the comet--5 minutes, 10 minutes, maybe even 15 minutes or more. These simple devices can be driven by hand or by inexpensive ac or dc motors. A barn door tracker allows you to do some longer exposure photography with the investment of an afternoon's time and a few scraps of lumber. Plans for barn-door trackers can be found in the astronomy magazines (if I'm not mistaken, *Astronomy Magazine* ran the plans for one recently--search through this year's back issues) or on the World Wide Web (if you have Internet access).

The next step up is piggy back photography. This involves attaching your camera to your equatorially mounted and driven telescope. The camera rides on the scope, but shoots through its lens; not through the telescope. If you have a suitable telescope, about the only other thing you need is a piggy back mount for the camera. These are easily available for sale by most astronomy vendors. Piggy-back photography with a normal lens (50-75mm or so) is very painless if you have a telescope with a reasonably good drive. I find that I can shoot piggyback medium format shots with a 75mm lens for at least 20 minutes without guiding with my Celestron Ultima 8 (Byers gears). By the time you reach a focal length of about 150mm or so, you really do need to start guiding on a star through the main scope. This isn't too bad, though, since you can make quite a few guiding errors and still come out



Simple astrophotography projects like imaging the Moon will help you keep in practice, and ensure you're ready when a 'special event' like Comet Hale-Bopp comes along! *Photo by Rod Mollise...*

results with plain old Tri-X with exposures of less than 10 minutes. This film is supposed to have absolutely horrible reciprocity characteristics, but I can tell you without a doubt that I've gotten very good piggy back and fixed

ranging from 15 seconds on up to about half a minute. Out in dark territory, you can expose longer--up to about two minutes. The limitation here is your tolerance for 'trailed stars.'

Amazingly, you can move





*The Nagler design by TeleVue is in as class by itself, and once you experience this, there is no turning back!*

with a decent picture at a short focal length like this.

The final step, of course, is prime focus photography for closeups of the comet. During prime focus runs, the telescope must be guided continuously. Most people choose to use an off-axis guider for this purpose. You'll also need an illuminated reticle eyepiece and a 't' ring to attach the camera to the guider. Modern Schmidt-Cassegrain telescopes have made prime focus imaging about as easy as this demanding process can ever become. The key here is practice and practice and practice...

Do you *have* to take photos or make detailed observations to enjoy the passage of Hale-Bopp? No, of course not. I had a wonderful time with Hyakutake, made only a drawing or two and didn't even pick-up a camera. But now, though, I wish that I'd made a few more drawings and attempted some photographs. I don't have much in the way of personal souvenirs of that wondrous beast's flight through the Solar System! But however you enjoy and record the comet: photographs, drawings, journal

entries, poems or even music, please share your personal Hale-Bopp lore with us!

--Rod

*Here's an excellent article by the MAS' own Pat Rochford...*

## Telescope Buying 1997 Style

Oddly enough, with the disappearance of more and more dark skies, there has never been a period in amateur astronomy where such a variety of telescopes and accessories has been available as now. Reflectors, refractors and catadioptrics in all price ranges grace the pages of Sky & Telescope and Astronomy magazines. Amateurs now have the problem of almost having too many choices as opposed to the too few available in the 1960s when I got started.

In the Mobile area, there is very little choice but to deal with mail order companies. The exception being that period around Christmas when

Wal-mart et al proudly display brightly colored cylinders that have the appearance of telescopes. The similarity stops there. The optical quality of products arriving from the Chinese sweat-shops does not, in my opinion, justify the price tag typically found on them. With the exception of being the occasional victim of the dreaded back-order, I have never been swindled by any company advertising in the pages of the above-mentioned magazines. That is not to say that their perception of time is always the same as mine. An example might be, 'I'll ship your new Celestron tomorrow, and you should have it by the end of the week.' The catch: he didn't really specify the end of *which* week! You'll definitely get it...just not when you thought. The final chapter in the delivery process is the arrival of the UPS truck which never actually comes to a complete stop while tossing out the box which reads 'FRAGILE - GLASS.' Amateur astronomy is not for the faint of heart!

For the most part (unless quality again takes a back seat to production for the arrival of Comet Hale-Bopp as it did for Comet Halley's apparition), telescopes made by Celestron, Meade and the like are a good value for the money. The optics in these are not the same quality that some small specialty firms produce--but neither is the price tag! Nearly all the views I've had through these telescopes over the years have been enjoyable. More often than not, bad images had more to do with bad collimation than the optics themselves. If you truly do have a bad mirror, these manufacturers will make good their warranty, as the market for telescopes is not so large that they can afford a bad reputation. In these days of Internet critics, it doesn't take long for the word to get around! If you don't

mind spending just a little more than the typical retail price, you can order a telescope from Company Seven, and they will test your new scope optically and mechanically before shipping it to you.

This is not to say that I find everything with Celestron, Meade, Orion, etc. is perfect either. As an example, take the review of three six-inch Dobsonians in the December issue of *Sky & Telescope*. Despite the fact that the Dobsonian-type telescope has been around for 30 years, none of the three tested had it all right. Meade had the best mirror, but because it had a big chunk of iron as a counter weight sitting in an unventilated tube, it took all night for the mirror to cool down. Celestron had the best mirror cell, but it was the worst when it came to azimuth bearing design, which was very sticky. There is no excuse for bad design, especially in a Dob. What is very important in a case such as this is letting the manufacturer know this is unacceptable so that the problem doesn't continue. We can only hope that amateur publications don't gloss over their reviews.

If you want *and can afford* custom optics, there are plenty to choose from. Refractor? Try **Astro Physics**. Roland Christen produces optical tubes and mounts that are truly second to none. They also come with a price tag to match! The only problem that I have here is that, in working toward producing optical perfection, he has lost (in my opinion) customers who can appreciate fine hand-crafted scopes, but just can't begin to afford them. The solution? Bring back the original (and affordable) Christen Triplet design as part of the line of scopes offered by Astro Physics. Call it the 'Christen Classic.' Having owned a 5" with this design, I can testify to its ability. Reflector? **Parallax Instruments**

produces a fine line of hand-crafted optical tubes with internal baffling as well as very fine mirrors, cells, and focusers. Again, the price tag is quite steep, but worth every penny if you can afford it. These are just two examples of small custom-made, high-quality telescopes typically advertised in the back of *Sky & Telescope* (and consequently overlooked). The two things to remember here are *cost* and *delivery time*. Six months or longer is not uncommon, so be patient.

Another option is building your own telescope with commercially available optics and components. This is probably not considered by most, since it seems difficult. Think again. It's not that hard at all! In 1995, I built a 24" Dob using a guide-book by **Astro Systems**. There was good telephone support at the points where I began to stumble (which, by the way, I've found to be the case with most small astro companies), and, with determination and patience, I completed a very attractive, capable, and user-friendly telescope. I am presently building an 8" Newtonian which should be finished by the time this article appears in print. Again, I made lots of calls and asked lots of questions. So far, it's coming together as planned. Although you can save some money by doing this, the more important aspect of building is that you can have exactly what you want and stretch the cost over a period of time. A few points to remember here are: (1) Order your mirror (or lens) first. The optician will *almost always* exaggerate the expected delivery date. (2) Spend a little more for quality components such as the cell and focuser. It will pay off in the long run. (3) Read and ask a lot of questions before you begin. The person selling you their product will usually be able to answer any question you have about installing it. His future

business depends a lot on word of mouth by customers (you!).

Finally, keep in mind the accessories that will allow your telescope to reach its full potential. One of the ways telescope manufacturers have been able to keep costs fairly level over the last 20 years is to reduce the number of accessories included in the base price. Of particular importance are **eyepieces**. The typical eyepiece included with a telescope is not what I would want in my set. In fact, I am going to state plainly that there is only one eyepiece design on the market worth consideration. *The Nagler design by TeleVue is in a class by itself*, and once you experience this, there is **no** turning back! The cost of these is 'astronomical,' but a Nagler is forever. If money were an issue, I would truly rather have only one of these than a complete set of anything else (I suppose I should also mention the Panoptic design by TeleVue, a longer focal length eyepiece in the same quality/price range!).

Whatever road you decide to take this year in purchasing a telescope, give careful thought to what you really intend to do with it. Ask lots of questions, read all the fine print, and then buy the most quality for the money. Make sure that it is within your physical capability to transport it outdoors and that it is within your ability to afford it in your budget. And most of all, be sure to enjoy using it!

--Pat Rochford



## Across the Universe of Books

Luginbuhl, Christian & Skiff, Brian. *Observing Handbook and Catalog of Deep Sky Objects*. Cambridge University Press. Cambridge. 1990. ISBN 0 521 25665 8

I want a new *Burnham's Celestial Handbook*! A new edition that is; one that goes a *lot* deeper than the original. *Burnham's* was *the* book that finally turned me into a hard-core deep sky observer, and oh how I've loved and used those three volumes! But then I (and amateur astronomy) seemed to start 'outgrowing' this wonderful work. As the years went by, I began to hope for a successor to this monumental book. But it became pretty clear that Robert Burnham wouldn't be updating his magnum opus any time soon--if ever--given some of his bitter pronouncements about how he was treated by the publishing industry. Oh, well. If not a new edition of *Burnham's*, how about a *pseudo Burnham's* from someone else? Something aimed at the 'true' (read 'fanatic') deep sky observer. One of the major problems with *Burnham's Celestial Handbook* is not so much the datedness of its scientific information--the facts and figures are easily found elsewhere. It is the limited scope of the work. In these times of an 18" Dob in every garage, *Burnham's* just doesn't go *deep*

*enough*. In fact, an 18" is, almost unbelievably, beginning to be considered a medium-sized scope. At any rate, I was handily able to outstrip *Burnham's* with my 12.5" Newtonian (a small scope?), and definitely needed something else.

For a while, computer programs like *Deep Space* and *Megastar* took up the slack. In addition to being able to generate fine charts, both of these programs have easily-accessed databases *full* of objects *way* deeper than anything in *Burnham's* (or *Uranometria* or the *Field Guide to Uranometria* in the case of *Megastar*). This was a practical solution, but the bald data in these programs left something to be desired. I wanted more than just the magnitudes and the Dreyer codes. I wanted some words on *what objects looked like to modern observers with modern telescopes*. I did seriously consider purchasing the *Field Guide to Uranometria*, but a close look revealed that its data was presented in much the same format as that found in computer programs--positions, magnitudes (maybe), and Dreyer descriptions. I kept looking.

At the 1995 Deep South Regional Stargaze I happened to see that fellow Mobile club member



Wayne Hester was using a copy of Brian Skiff and Christian Luginbuhl's *Observing Handbook and Catalogue of Deep Sky Objects*. Hmmm. A casual perusal impressed me. It certainly contained a wealth of information on the deep sky. Tons of objects, arranged by constellation, with each object (or group of objects, anyway) getting at least one descriptive paragraph. This seemed to be just what I was looking for! During the afternoon, I used this book to run down the data on the star gaze's 'challenge list' objects. That night, at the telescope, I found that Luginbuhl & Skiff's descriptions tallied very well with what I was seeing at the eyepiece of my 8" Schmidt Cassegrain. I was not overly surprised, considering the reputation these two observers have in the deep sky community! During the stargaze, I appropriated the book at every opportunity; both to glean information on the objects I was seeing, and to search for new and interesting deep sky denizens. I was very reluctant to turn the book back to its rightful owner, but, at the end of Deep South, Wayne *finally* managed to pry it out of my hands.

Returning home, I decided that I *just had* to have the book. Or did I? At about \$50.00 it seemed a bit expensive, even though it is a large format (12x8) 352 page tome. After all, I could put that \$50.00 toward a NAGLER or another filter, or.... While I was vacillating, I did take a look at one other recent deep sky book, Roger Clark's *Visual Astronomy of the Deep Sky*. While this is a fine and informative volume, it just doesn't have the large amount of deep sky data I was looking for. This is not a criticism, since this is not the book's purpose, and, indeed, *Visual Astronomy* is on my 'to buy' list. Finally, though, I decided that I *did* 'have' to have the *Observing*

*Handbook*, bit the bullet and ordered a copy.

Since it had been almost a year since I'd looked at Wayne Hester's copy of the *Observer's Guide*, I was curious as to whether I'd still be as impressed as I was initially. In short: *I was*. This is a *beautiful* book, and while it is not 'Burnham's II,' it is at least as useful as *Burnham's* in its own way. Though the *Observing Handbook* does not contain the tremendous amount of background information found in *Burnham's*, it is jam-packed with mouth-watering information on deep sky objects. A typical entry reads:

*'This is a faint galaxy for a 25cm, appearing less than 1' diameter and showing no concentration. In 30cm it has a fairly low surface brightness. The 20" core is moderately concentrated but is without a distinct nucleus; a very faint stellaring is occasionally visible in, or just N of the center. The halo is irregularly bounded and elongated a bit SSE-NW. Several faint stars lie scattered across the field.'*

While it is hardly bursting with pictures, and is certainly not 'illustrated' in the same way *Burnham's Celestial Handbook* is, the *Observing Handbook* does have some attractive and useful charts and the occasional eyepiece drawing. The eyepiece drawings, in particular, were very useful for me; I just wish the book had more of these .

Any criticisms? Only a couple. As I mentioned above, I would have loved to have seen a few more of the wonderful eyepiece drawings which are found scattered through the constellations. Also, I hope that Mssrs. Skiff and Luginbuhl see fit to expand the volume in the future. While it is a big advance, the book *still* doesn't go

deep enough (the largest telescope regularly used by Skiff and Luginbuhl is a 12"). This became obvious when I was using the *Observing Handbook* with a friend's 24" telescope. I know that compiling data like this is a tremendous undertaking, but amateur telescopes are getting **bigger and bigger** (with no immediate end in sight), and our voyages deeper and deeper. *Give us more!* I will say that this work is really perfect when used with my 8" SCT, and is *fairly* well matched for the 12".

*But I love this book!* The combination of the *Observing Handbook and Catalogue of Deep Sky Objects* and charts generated by *Megastar* (I only occasionally refer to *Uranometria* or *Sky Atlas 2000* any more!) seems just about *unbeatable*. This book (and my computer) have allowed me to travel farther into the wondrous depths of universe than I ever *dreamed* my modest 12" telescope would take me!

--Rod

## Comet Tales

*I've been keeping a journal of my Hale-Bopp observations on the Mobile Astronomical Society World Wide Web Site. I thought that those of you who don't have web access yet might like to read my musings on the GREAT COMET...*

'Herein, you'll find the chronicles of the Great Comet (we HOPE) of 1997, Hale-Bopp!...'

My first encounter with the famous (infamous?) Comet Hale-Bopp came during the annual Deep South Regional Stargaze of 1995. Since the Comet

was still very far out in the dark depths of the Solar System, I didn't feel that I had much chance of observing it visually with my 8" SCT, but I resolved to search for it anyway. As I was in the process of trying to find the right field, Russell Whigham of the Auburn Astronomical Society announced that he had Hale-Bopp in view in his C11! After observing the comet in Russell's scope--dim but visible, a stellar-appearing nucleus seemed apparent occasionally--I moved back to my Ultima 8. And there it was, looking about the same as it had in the C11--I had been on the right field after all. Who was it (Herschel!) who said that an object, once found, becomes easier to see? That was definitely the case here! While Hale-Bopp was certainly not spectacular, I was amazed that such a distant comet was even visible!...

My next good look at Hale-Bopp came a year later; again at the Deep South Regional Star Gaze (McComb, Mississippi). My friend and fellow observer, Pat Rochford, and I had tried to view the comet from our light-polluted sites during the Summer of '96 with mixed results. The little beast was visible, but didn't look much better than it had at DSRSG '95. As soon as darkness fell on the first night of DSRSG '96 I was searching for the Comet. As if much searching were required! The Comet was easily visible in the C8, shining brightly among the subdued stars of Ophiuchus! A pseudo-nucleus was easily visible as well as lots of coma, tail, and some indications of a jet! I found Hale-Bopp to be discernable, though somewhat dim, with the naked eye; looking much like a fuzzy star. I managed to get a couple of good medium-format photos of the comet, but they are certainly nowhere near like what should be

obtainable in a month or two!...

January 19, 1997, Sunday morning:

Despite the cold weather and somewhat hazy skies, I set my alarm clock for 5:45am in hopes of getting my first look at Hale-Bopp after his conjunction with the Sun. After (barely) managing to convince myself that getting out of bed was worthwhile, I grabbed my binoculars and headed downstairs without expecting much. With the comet only 10 or so degrees above the eastern horizon, and with the tremendous amount of light pollution we have here in the Garden District (Mobile, Alabama's historic district--i.e. downtown), I didn't have a whole lot of hope. Looking east from my backyard, my hopes became even fainter--the entire eastern horizon was a milky haze swiftly being illuminated by approaching dawn. Nevertheless, I put my 'ole reliable' 10x50s to my eyes and started scanning. 'Well, there's Zeta Aquilae. It should be just below that...tree in the way...move over a bit...hmmm...' AND THERE IT WAS. I'd been reading lately that Hale-Bopp was increasing in brightness rather dramatically, but it hadn't prepared me for this! Way down there in the murk at the edge of the world, the comet was shining brightly at mag 3-3.5 or so, bravely fighting the Sun. In fact, in 10x50 binoculars, the comet now looks very similar to how it looked through my 8" Schmidt-Cat last October (high in the sky and from a dark site)! In addition to a bright pseudo-nucleus, the comet sports a

respectable (considering the circumstances) tail which is broad and fan-shaped and seems to point northwest. All I could think was, 'How would it look if it were only 10 more degrees above the horizon?!' GET OUT THERE AND START VIEWING HALE-BOPP NOW! The comet is much more impressive than Hyakutake was only a month before his spectacular show! What wonders does Hale-Bopp have in store for us?

January 26, 1997 Sunday:

Just getting over this blasted flu, but the prospect of the first clear skies in several days meant that I went ahead and set the alarm for 6 am--no matter how lousy I felt! I was very anxious to get another look at the comet since Pat Rochford had reported that it was an EASY naked eye object from his Fairhope, Alabama site last week. And yes, lo and behold, there it was: a 'fuzzy star' hanging weirdly on the eastern horizon! At an elevation of about 20 degrees, Hale-Bopp is now out of much of the murk of the horizon, and was very impressive in 10x50s! I found the comet's pseudo nucleus to be brighter and more prominent than it had been during my last observation; in general Hale-Bopp just looks bigger and brighter and better all the time! I observed this ghostly visitor from the dark realms until dawn obliterated his nebulous light. I hope to be feeling a bit better soon so I can drag the 12.5"Newtonian out and see what this mighty comet looks like under higher magnification!

February 9, 1997, Sunday Morning:

It's been a while since I was able to take a look at our friendly neighborhood comet. Work and weather--especially weather--conspired against me. I had hoped to get a wonderful view of the comet from the dark skies in the middle of the Gulf of Mexico last week (I was onboard the USS Ross, the Navy's newest guided missile destroyer for her maiden sea trial), but wouldn't you know it? CLOUDS!!! Anyway, I set the clock for 5am on





Sunday morning and hoped. I just barely managed to drag myself out of bed when the alarm sounded (still nursing cold/flu), but it was, again, worth it! The comet looks about the same as last time--just 'more so.' He still sports his lovely, broad fan-shaped tail, but this appendage has now grown to 2+ degrees (in my horribly light-polluted surroundings). In binoculars, I noticed some faint hints of a jet (or nuclear hood?), but couldn't really tell what the story was. Maybe next time I'll be feeling a bit better and will finally be able to take a look at Hale-Bopp with the 12" Newtonian. I did take a few photos of the comet--unguided, stationary on a tripod (35mm camera, 58mm f1.2 lens). Don't know if much detail will be visible in all the light pollution, but I've been pleasantly surprised before! Anyway, the comet is beautiful; his nucleus sparkled like gold dust in the approaching dawn!

February 15, 1997, Saturday Morning:

'Well, where is that darned comet? Should be fairly high in the sky by now (wipes sleep from eyes). What's that?...a bright star or...MY GOD!'

In the week since I'd seen our friend Hale-Bopp things certainly had changed a lot! Look to the east at around 5:30am or so, and you'll see a prominent 'star' shining at magnitude 1-1.5 or so WHERE NO STAR SHOULD BE. It is a truly bizarre sight! Strain with the naked eye for a moment and you can, from heavily light-polluted surroundings, pick out a hint of comet tail! Through 10x50 binoculars, the comet is a revelation. Not only is his broad dust tail more prominent than ever, an ION TAIL is now obvious, extending several degrees to the west (I'm extrapolating

a bit here, the light pollution makes determining the extent of the ion tail a little iffy). I'd conservatively put the total magnitude of Hale-Bopp at 1.5, but it may really be closer to 1! I squeezed off a few pictures, but by the time I got the camera set up, the sky was probably becoming a bit bright. Once again, I didn't get around to setting up any of the telescopes--the rain storm that passed through yesterday left an inch of water standing in places in the back yard!

February 18, Tuesday Morning:

Left 'Big Red' (the 8" f7 Coultter) out in the yard overnight so his plate-glass mirror would be thermally stabilized when I got up in the morning. There was a little dew on the tube at 5am, but not much. Anyway, as I've stated before, it would practically take a hurricane to damage the Coultter, which really is built like a tank! Since I have to leave for work at 5:35am, I have to observe the comet when it's a little closer to the horizon than it is during my weekend observing runs. Just when Hale-Bopp reaches a nice altitude, and the scope starts delivering really good images, I have to close down and head off to work. Oh well. But the comet did present a most beautiful spectacle this morning! I was particularly pleased by its appearance in the wide field of a Nagler II 12mm eyepiece (at about 112x). It may be my imagination, but I felt that the southward pointing jet had dimmed a little. This may, however, have had more to do with seeing conditions than the level of the jet's activity. Still no signs of the 'chunks of nucleus' that Pat Rochford is reporting. But that's not surprising, considering the fact that he's using a 24" housed in an observatory! I'll view the comet with my 12.5" Newtonian this weekend (assuming

that the weather cooperates--another bout of stormy weather is supposedly on the way). Just before calling it quits, I turned the 8" toward Mars and was rewarded with a lovely, quite detailed image of the Angry Red Planet. Still a bit small, but I think this is going to be a beautiful apparition! Finally, I just stood and took a good naked-eye look at Hale-Bopp. The tail is very obvious; our visitor really 'looks like a comet!' I'm very surprised that there hasn't been more notice of Hale-Bopp by the general public/media. I guess this is because of its placement in the morning sky. Not too many people are up by choice at this hour, and those who are are not very interested in looking at the sky (their loss)!  
--Rod

Stay tuned to this page for further installments!

## Astrobytes

Spring observing season is here, and I



know you're all anxious to shut down your computers and get out under the night sky. But before you turn your computer off, why not take a look at The Mobile Astronomical Society's World Wide Web site? Yes, I finally got around to putting up a home page for the MAS, something I'd been

threatening to do for some time! Actually, once I got started, I found that putting together a Web Page was much easier than I had expected. Not that the MAS page is overly fancy at this point, but I do feel that it contains some good information. Suggestions for this page are urgently solicited! I am particularly interested in your favorite Web sites, since one of the MAS pages in a 'link page' with a so-far somewhat short list of my favorite WWW destinations. The MAS World Wide Web Home Page can be accessed by pointing your browser at:

<http://members.aol.com/RMOLLISE/index.html>

I'm hearing that there's a lot of interesting astronomy software coming out in the next few months. For example, the famous Macintosh astronomy program, Voyager, is finally coming to Windows! If you have a favorite piece of astronomy software that you've been using which I haven't written about, how about doing a review and sharing your experience with us?

The following is the text of a posting I made to the Internet's ASTRO mailing list:

*What has surprised me more than anything else concerning Comet Hale-Bopp is the public and the media's reaction--or, more accurately, lack of reaction. There's a beautiful comet hanging in our morning skies now that really looks like a comet, and barely a peep is heard about it. I know that down here (Mobile, Alabama) we tend to live in something of a cultural/scientific black hole (though I think this is changing a bit), but from what I can determine, there seems to*

*be a complete lack of enthusiasm for this spectacular light-show in other parts of the country as well. Am I wrong?*

*I have heard the occasional report on CNN, and seen a newspaper article here and there, but most of what I'm seeing seems to be of the half-assed space-filler variety. I guess that the public/media's ignorance about the comet can be rectified by the efforts of astronomy clubs and interested individuals--our club has some success down here, but I'm astonished at the state of things.*

*Back in the sixties, there was a tremendous amount of interest in and publicity about Comet Ikeya-Seki. This Comet was nowhere near as spectacular as Comet Hale-Bopp promises to be (or maybe even is by now), and it was, I recall, as Hale-Bopp is now, a morning object. But the average man on the street was informed and excited about Ikeya-Seki. I remember setting-up my little 3" Tasco Newtonian in the front yard of my parents' house before dawn and having numerous passing cars stop. Early shift workers on their way in and late shift workers on their way home were anxious to get a telescopic view of the comet! But maybe the main problem with Hale-Bopp is that it is a morning object--most people who are up at that hour are not awake of their own volition, and are not too concerned about what is going on in the sky! Still, I remember lots of people getting up early to hunt for Ikeya-Seki. What has changed?*

*Again, maybe I'm wrong about all of this...perhaps there is more awareness in other parts of the country. Down here, there was quite a bit of interest in Halley. Some interest--though less than I had expected--in Hyakutake (I blamed this on the swiftness with which ole' 100*

*Warriors came and went). And much less in Hale-Bopp. Nationally, it seems as if even the tabloids can't drum up much interest in the comet (killer comet, Saturn-like-object, etc. nothing seems to work). What are your thoughts?*

--Rod



## My Back Pages

### AstroPoem

#### Hale-Bopp II

You're finally here,  
 Your gossamer train  
 Lighting my mornings.  
 All our wishings and hopings  
 Are at an end.  
 You will be what you will be.  
 And that  
 Is enough.  
 When I see your beauty  
 I want to RUN.  
 Rousing all;  
 Asking why they don't want  
 To awake  
 To See.

--Rod



### Club Notes

**January 1997 Meeting/Annual Club Dinner:** The combined January meeting and holiday dinner of the Mobile Astronomical Society was held on 8 January 1997 at Shoney's Restaurant in Tillman's Corner. George Byron had thoughtfully arranged with Shoney's for us to again have the

use of their back room, and by 7:15 we had a packed table, something which was nice to see since last year's dinner was rather sparsely attended!

The first order of business was congratulating newlyweds Phyllis and Leland Cox, who had just returned from their honeymoon! Best wishes, guys! We then acknowledged the welcome presence of club Past-President David Switzer. Obligations at work have kept David away from the club for the past few years, but many of us remember what a fine job he did as club president, and what a talented observer he was! David was our 'Jupiter expert,' and his leave-taking has meant that when I've had a question about the giant planet, I've had to resort to looking through books or doing Internet searches! Bummer! We certainly hope that his current job requirements will allow David to again be active in the MAS! Club member Sherri Martin had some exciting news: she's planning a trip to see Alan Hale and Thomas Bopp (the discoverers of Comet Hale-Bopp) speak. This presentation, put on by the Atlanta Astronomy Club, should be wonderful! Sherri also reports that she's bought a new vehicle, one big enough to easily transport her 13" Odyssey telescope! Next, Loxley Greaves presented a treasurer's report indicating the club is in OK shape financially (other than buying parts for the club cookbook camera, we're not looking at too many major expenditures any time soon). George Byron had details on the upcoming Mid South Star Gaze in French Camp, Mississippi. Club members were obviously eager for details on this popular outing! Finally, Judy Anderson told us that she will indeed be attending the Winter Star Party in the Florida Keys (it's becoming increasingly difficult to get into this event, with reservations now being dispensed by LOTTERY, I understand). Judy has promised a complete report--and a newsletter article--on the star party when she returns.

The remainder of the meeting was devoted to general discussion, laughter, and a lot of over-eating (mainly on my part; the food at Shoney's seems much improved over last year)! We also had some time for reflection on club goals for the coming year. There seems to be a general consensus that our Number One project should be locating a new club dark site!

**February 1997 Regular Meeting:** I was unavoidably absent from the February 1997 MAS meeting due to being at sea onboard the brand-new guided missile destroyer Ross (a grand lady!). When I returned, though, Pat Rochford filled me in on the details of what was obviously a very successful meeting! Long-time member Kent Clark (USA Physics Department) showed-up with a few of his students in tow,

bringing the meeting attendance number to around 25, which is very good for us in recent times; it looks like the club is really going and growing again! Most of the discussion (obviously) concerned the already-spectacular Hale-Bopp! You have been observing it (when this horrible weather permits), haven't you? More discussion followed on the Spring ESC/MAS Star Gaze (see further details below)...

#### ANNOUNCEMENT

Further details will follow, but for NOW, we're planning on holding the Spring Environmental Studies Center/MAS Public Star Gaze on 5 March. This is the first Wednesday of the month, so the Public Star Gaze will be held in lieu of the normal March meeting! Stay tuned for further details, and be sure to attend the February club meeting for more information on this important event. Remember: your support is vital to the success of the Star Gaze! In recent times, we've had so many visitors (usually around 1000) that we need every single telescope we can get onto the field!

#### UPDATE!

We are discussing with Diane the possibility of moving the star gaze to another date! With no Moon in the early evening sky, and with Mars rising rather late, and Saturn setting a bit early, there's not much for the little ones to view during the first week of March! In the past, we've found that smaller children (and, indeed, older ones and adults) without observing experience do best on the planets and the Moon--they just have a hard time viewing deep sky objects (the light pollution level out at the ESC doesn't help either)!

If you'd like a copy of the club logo I designed ('Mr. Possum'), just send me an e-mail letting me know which graphics format you'd like the file to be in (pcx, jpg, etc.), and I'll send you a copy (via return e-mail)!



--Rod

## Editor's Musings-- Once Upon a

## Midnight Dreary...

**What can you possibly say when, within the space of a few weeks time, you lose two close friends? I never had the pleasure of meeting Carl Sagan or Clyde Tombaugh in person, but still I call them 'my friends.' Their work, their writings, and the example of their lives provided me with a great deal of personal inspiration over the years. Mr. Sagan's books, in particular, helped me through some tough and trying times about five years back. We can, I guess, at least take comfort in the certain truth that two beautiful spirits are now free to roam the cosmos...**

Iggy my **official 'astro-cat'** is back! During the 1995 observing season, I began noticing that a little cat had started keeping me company as I observed Mars. Iggy (not sure why I started calling him that, but it seemed to fit) was small and gray-striped, and was obviously interested in what I was doing. Before long, Iggy became my regular back-yard observing companion. He was always content to sit and watch with me through even the longest run. When I called it quits for the night, Iggy trotted off home, which, I discovered, was under our house! While Iggy and I obviously shared a love of the heavens, and spent many wonderful hours together, some event in Iggy's little life had made him deathly afraid of humans, and he would not allow me to approach closer than about 6 feet no matter how much I tried.

Late in 1995, Iggy 'helped' me observe Saturn's series of ring plane crossings. Each night, I carried on a running commentary on how beautiful the planet looked while Iggy played the part of the attentive listener. Finally, one evening in early '96, I thought I had made a breakthrough in my relationship with the quiet little cat. Iggy had obviously been fascinated by my Meade 12" Dobsonian telescope for a long, long time, and, on one of the last good nights of Saturn's apparition, he gathered up his nerve and began walking toward me. I was overjoyed. Iggy walked up to the Meade and hesitatingly extended his tiny paw to touch the mount. I just couldn't repress a chuckle of pleasure at the sight, and it was then that things *went to Hell!* Iggy looked up, saw me, and jumped--flatfooted--at least three feet into the air! He shot off into the night like a rocket, leaving me stunned. But I quickly realized what had happened. I had been studying Saturn intently and had neglected to carry on my usual one-sided conversation with the cat. He, in turn, had been so intent on the telescope that he hadn't noticed *me*, and had decided that it was safe to touch the Dob. He looked up, saw me standing there, and freaked!

Sadly, I didn't see Iggy for a couple of months



after that. When I finally caught sight of his little gray form again, he was at the end of Selma street, almost at Michigan Avenue. I stopped the car and called to him, and Iggy *did* stop, but only long enough to turn and give me a dirty look that seemed to say 'traitor!' Another couple of months went by before I got more than a long-distance glimpse of my old friend again. This time under very sad circumstances. Heading off to work one morning, I sighted Iggy standing right out in the middle of Michigan Avenue! I stopped, and soon saw what was going on. He was standing faithfully beside the body of his friend, an aged yellow tom, who had been run down in the street and killed. Thinking back, I remembered that I had occasionally seen Iggy and the yellow cat as they had made their 'rounds' through the neighborhood. Poor Iggy was nudging the body of his pal, trying to get him out of Michigan Avenue. I did the only thing I could think of: I yelled at the top of my lungs at Iggy to GET OUT OF THE STREET! The cat naturally ran in fright. I thought, sadly: 'That's the last I'll ever see of Iggy.'

But then, imagine my surprise this past Winter when I saw a little gray face peering out from under our porch one afternoon! And, not only that--Iggy was accompanied by a gray tabby-cat female and a young kitten! I've been plying Iggy and his family (I don't think I've ever seen three cats traveling in a family group before) with cat chow, and hope to keep the three of them safe at home now! What brought the Iggster back? At first I was puzzled, but then it came to me: *the upcoming apparition of Mars*. He obviously couldn't let this opposition go by without checking-out the red planet with 'his' 12" Dob!

I have in hand the January and February issues of *News-Scope*, the journal of the **Birmingham Astronomical Society**. This newsletter, edited by the BAS' Mark Lancaster, is very professional looking--*and informative!* We're now exchanging newsletters with the BAS, and I hope this is the beginning of a closer relationship between the MAS and our sister society in Birmingham!

Speaking of our sister Alabama clubs, have you sent the **Auburn Astronomical Society's** Russell Whigham your e-mail address so you can start receiving Auburn's wonderful 'online newsletter,' *Astrophiles*? If not, mail Russell at [rwhigham@mindspring.com](mailto:rwhigham@mindspring.com)!

--Rod

*Walking down Selma Street the other day, we were surprised to see what appeared to be a wayward Mardi Gras float making its way down our quiet, tree-lined street. Even stranger was the appearance of the float: it looked like a **giant nacho on wheels**. And what strange*

*words we heard coming from the maskers: 'Huh huh huh huh Mardi Gras is cool. Yeah, yeah, Mardi Gras is cool. Heh heh heh heh.' Despite the oddity of it all, we couldn't stop ourselves from voicing Mobile's time honored Mardi Gras cry: 'THROW ME SOMETHING, MISTER!' And indeed something was thrown at us, but it was not a Moon Pie. As the object hurtled toward us it was obvious that it was a hermetically sealed mayonnaise jar containing the latest edition of ...*

## RUMOURS

*Have you been following the surprisingly nasty feud between the Texas Star Party and the owners of the Prude Ranch?* Since its inception, this premier North American star party has been held at the Prude Ranch near Fort Davis and McDonald Observatory in west Texas. But the Prude Ranch has apparently had some rather hard financial times lately. And, as the date neared for mailings for TSP '97 to begin, the new owners of Prude announced that they wanted a price increase this year --a tripling of the 'cover' charge (to \$15,000.00) and a hefty increase in 'room and board rates.' This seemed excessive, and the TSP committee attempted to negotiate (I'm told), but Prude would not budge. With time running-out, the TSP finally opted to move the '97 event to Alto Frio Baptist Encampment in the Real (re-awl) Country close to the little town of Utopia, Texas, near San Antonio.

**Then**, Prude, in **apparent retaliation**, supposedly let it be known that the **TSP items stored on the Ranch were 'Prude Ranch Property.'** Since this consisted of a **complete amateur radio station**, long lengths of power cable, and other pricy items, the TSP committee was understandably put out (to put it mildly). Next, the Prude people started advertising *their own star party*, 'WESTEX,' which is to be held on the same dates, May 4-11, as TSP '97! That seemed to put the final nail in the coffin for those of us who hoped that TSP might be able to return to the Davis Mountains 'someday.' BUT, while it seems obvious that the TSP will be held at the new site *this year*, some of the heated rhetoric seems to be dying down. Prude Ranch stated publicly that TSP personnel were free to pick up the stored equipment at any time, and that it was all a 'misunderstanding.' It has, indeed, been confirmed by the TSP's **Barbara Wilson** that the items have been returned. **Of course** there still is the matter of **WESTEX**. Many people now believe that **the whole thing was an attempt to take-over and PRIVATIZE the TSP** by Prude Ranch. This, of course, may not have been their intent at all. Only time will tell. For now, though, we can look forward to attending the TSP at this new site which was reportedly carefully

surveyed by TSP committee members. On the *up side*, the **skies are said to be even darker than they are at Prude** (and the weather no worse). On the *downside*, people are quite put off by some of the **posted rules** of the Baptist Encampment at Alto Frio: **NO alcoholic beverages, NO cussing/bad language, NO attire that doesn't reflect Christian morals** (shorts/bikinis?). More reports on this as star party time (May 4-11) draws near!...

**C5 going, going, gone...?** According to ads by the **company formerly known as Orion** ('Telescope and Binocular Center'), the Celestron **C5 has been discontinued**. Those of us who noticed these ads in the February issues of the glossy astronomy rags aren't quite sure whether this means that *both* the C5 and C5+ have been discontinued or *just* the C5. I frankly wouldn't be surprised to see this nice little telescope go the way of the dinosaur (again). If I recall correctly, the C5 was introduced in the early-mid seventies (though I think Celestron equipped some early **C10s**, etc., with C5-sized guidescopes even earlier), but disappeared for many years because Celestron found that they **couldn't produce them much more cheaply than they could the C8**. Naturally, most buyers opted for the larger C8 (with the exception of a few who were willing to pay a premium for a more portable telescope).

Can the C5 compete with Meade's still inexpensive (even after a \$100.00 price increase) **ETX** for the attentions portability-conscious buyers (eclipse

chasers)? While the ETX *could be better* mechanically, it is clearly proving itself to be *more than adequate* in this regard, and most reports **rate its optics as excellent**. The ETX is also clearly easier to lug around than even the C5, an important factor for eclipse mavens. I expect to see a lot of eclipse photos taken with the ETX in 1998.

Another rumor that I'm hearing quite persistently is that Celestron plans to reintroduce the *C90 Astro*. If you don't remember this little scope, it was around in the 80s, and consisted of a C90 OTA on a single arm fork mount with a drive (I think). A couple of problems here, though. Unless its optics have improved *considerably*, no C90 that *I've* seen is as good as I'm *hearing* the ETXs are. The other problem is that current C90s with 1.25" accessories are almost as expensive as a complete ETX! If Celestron can get the **price down** and the **quality up**, though, they may have something here, since there are two solar eclipses in the offing ('98 & '99) and the ETX is in very short supply. In fact, I'm told that an **Atlanta amateur** walked into his local **Nature Company** and asked for an ETX (Nature Company was supposed to have 'a lot' of ETXs at Christmastime). The Nature Company people just laughed and laughed! Our friend then asked to be put on the 'waiting list.' More laughter!...

**Little Birds are Chirping About:** *TeleVue's other new refractor, the TV101*. Last time, we reported on Uncle Al's new and *expensive* TV140. Well, now we're hearing about the **TV101**, a four inch refractor with an objective 'similar to that of the TV140!' We're not really sure exactly what this means...could it be that this four incher lacks the Genesis' built-in field flattener/focal compressor? Will it be more or *less* expensive than a Genesis SDF (always an important question for ye olde keeper of the mayonnaise jar when it comes to refractors!)?

--the anonymous astronomer



Going, going, gone?

*Skywatch*® is published bi-monthly as a service to Mobile's amateur astronomers. Submissions are always welcome. Address correspondence to:

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If possible, submit materials for *Skywatch* in machine-readable form. WordPerfect 6.1/6.0/5.1 format is preferred, but a wide range of word processors is supported. Members of the *Mobile Astronomical Society* currently receive their issues of *Skywatch* at no cost at Society meetings, but mail subscriptions to *Skywatch* are available for a nominal fee. Unless otherwise noted, the entire contents of *Skywatch* is copyright © 1997 by Rod Mollise. If return is desired, postage must accompany all manuscripts, drawings, photographs, etc.

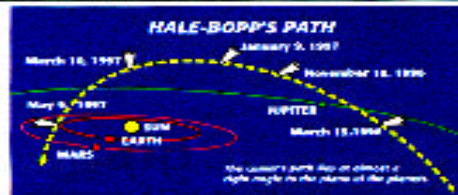
March-April 1997 Volume 6 Issue Number 2

The beautiful apparition of comet Hale-Bopp is the perfect time to introduce children (and their parents) to the wonders of amateur astronomy. How many new amateurs (and club members) will you 'produce' during the run of this celestial show?

Peace,

Rod &  
Dorothy

## Keep an Eye on Comet HALE-BOPP



### HALE-BOPP'S PATH

Hale-Bopp is scheduled to be visible through November 1996 and again in 1997. For the Northern Hemisphere, Hale-Bopp will be well placed in the predawn sky in the spring of 1997 and most easily visible on March 24, 1997, when it is at a distance of 123 million miles from Earth.



**99<sup>99</sup>**

525x60mm astronomical refractor telescope. Includes a 1.25 inch mount, 1.5 inch spotting scope, 3x finder scope, 1 inch or 1.25 inch eyepieces, 3x Barlow and adjustable tripod. #55-48130001

We have many more styles to come!

**RECENT RADIO SHACK AD:** Everybody's tryin' ta get in ta da (comet) act! I've seen scopes for sale in some odd places, but never before in Radio Shack. As you might expect from the tone of this ad (525 POWER), their scopes aren't much...