

The View From Arunah

Arunah Hill Natural Science Center

Vol. 8

Winter1995

Welcome to the Winter edition of "The View From Arunah" the Arunah HOI informational newsletter.

Thank you for supporting your Dark Sky Observatory, Arunah Hill Clearing Parties/Observing Sessions are still the first Saturday of every month, in addition there are other observing events. *Please see schedule for more info.* If you would like to take part in any of the projects or activities., call Steve Pie lock at (413) 772-6715 or Joe Zuraw at (413) 665-7402

Hello 1995

I told Steve (The Editor) that as president and former principal writer of the "View from Arunah" I ought to have a few inches of column space at the beginning of the year to say a few words about upcoming events.

Without a doubt this is the most ambitious year of programming we have ever done! 59 day of scheduled events!

February 10: An all night Planet Party celebrates our Solar System with Mars closet approach, Saturn leaves the evening sky, Mercury rises high in the pre-dawn sky and welcome back Jupiter as well.

February 27: A pre-dawn Planet Party at 5:00 am to observe a conjunction of Mercury, the crescent moon and Venus followed by breakfast at Howes Café.

March 3: Starts a series of 4 days scheduled for this year's Messier Marathon. The first really good night will be the actual Marathon.

April 13: Another pre-dawn Planet Party at 4:00 am to see a conjunction of Venus and Saturn with breakfast at Howes Cafe

May 22: Saturn's rings edge on 4:00 AM

June 23: Solstice Star Party/Planet Party to see all of the major planets in one night! June 30: 9:00PM Moon occults M67 in Cancer

August 18, 19, & 20: The 4th Annual Arunah Hill Days! We are going to n'ork hard to make this one better than ever!

September 23: Star Watch Class of '95 starts.

October 20: All night observing, Orionids meteor shower, Mercury in pre-dawn sky, breakfast at Howes Cafe.

And this is only the tip of the observing iceberg, get ready for dark skies in 1995!

Hats off to the Star Watch!

The nearly 100 members of Arunah Hill and the hundreds of individuals who benefit from our programs will see an improvement in service, because of the fledgling Star Watch Program.

The graduating class of 1994 had 7 members from all over the region. They received training in Arunah Hill political structure, program procedures, telescope operations and emergency preparedness. They will help in planning and running future events and programs. With responsibility comes privilege. The Star Watch staff will have keys, to all of the Hill's facilities and access to additional training to sharpen their skills. They will also enjoy more clear nights than the average member. And have the satisfaction that comes with being involved in something meaningful and important to others.

An un-named matriarch of a family known for its intelligent and successful members once said to a grandson “if you want to maintain the family tradition marry brilliance into it”.

Like the wise matriarch we recognize that to grow and prosper as an organization we must bring new ideas and enthusiasm into its planning and decision making. These people (the Star Watch) represent the very highest ideals of amateur astronomy. Arunah Hill serves the public and amateur astronomy in the Northeast region. Hats off to Arunah Hill's Star Watch!

- Joe Zuraw

Welcome New Members

We would like to say hello and welcome to the newest members of Arunah Hill.

Rich Volant	New Fairfield, CT
Patti Eli	Waltham MA
Bob Howe	RI Sky Skrappers

Thank you for supporting Arunah Hill.

New Arunah Hill patches are in

They are 3" by 5" and have the new Arunah Hill logo. The patches are done in three colors (black-white and yellow).

They are 85.00 a piece (All proceeds will go into the drive way fund). We only have about 40 left, once their gone that's 'it! So order today. by Contacting Steve Pielock at 413 772 6715.

Beneath the Wings of the Flying Horse

By Shawn Whitney

When I was of tender year's I recall November days and how perfect they all were. Whether the sky was deep dark blue or whether it was a gray overcast with the Sun appearing as a subdued diffuse blob-it was perfect, simply because it was November.

I would roam the woodlands, tramping through fallen leaves, exploring 200 year old cellar holes, walking along the crest of some old gray falling down stone wall, and appreciating the brilliant display of golden yellow Tamaracks just before the snows began to fly. It was the best time of the year one could look from a ridge top right through the trees and see for miles.

As for the evenings, I felt a calling and I would dress warmly and with my charts and my Dad's binoculars I would step out under the stars for an evening of silent communion and learning. Those days are long gone, but those memories will remain forever watched in some convolution of my brain, and all I need to do is to recall some part of a long gone day, and it will come alive for me once more.

Memories are good, especially when they are triggered by the onset of new memories. It is now the weekend of November 12, 13, 1994. It is an Arunah weekend. Three of us have come here to enjoy h'3mping through fallen leaves, walking abreast an old stone wall, smelling the scent of Balsam in the air at Land's End, and to enjoy an evening of enlightening fellowship and communion with each other and the stars above.

Upon arrival we helped Joe Zuraw for a while with a little work around the clubhouse. Bob Osgood also showed up and got ready for an evening of observing.

By 4:00 pm the Sun was nearing the horizon. My brother Dave, his son, Carl and I headed for a brief hike. A November sunset from Raven's Perch Lean-to ranks among the best which anyone could ever experience. On the South Ridge we heard a low growl not far away, possibly a Black Bear. Soon we were back at the Observatory and observing with Bob Osgood. My brother and nephew don't often see through a telescope and despite a broken gray overcast and a waxing gibbous moon we enjoyed ourselves. We first took a good look at the moon, and then we turned our attention toward Saturn. With a 15mm eyepiece it was a jewel. Detail in the rings and on the cloud belts of this cold world added to our enjoyment. Only 2 moons were visible. We roamed through holes in the cloud cover in order to pick out further objects. We only had about 2 hours of observing before the sky finally covered over with clouds. The two most beautiful sights tonight were Epsilon Lyrae, the " double-double" , and the Double Cluster in Perseus. With a 26mm Piossl the Double Cluster was riddled with dozens of tiny diamond-like stars. It was tremendous. What a sight! On top of that, Bob and I were ranking this night as only a 3 on a scale of 1-10. We used the 6 in. Gaertner for all our observing.

Through all of this, the stars of Pegasus rode high in the south, bathed in strong moonlight, and swimming amidst a sea of thickening clouds.

What do Astronomers go for when the seeing gets bad? We drink hot cocoa, sing in front of a warm fire, tell stories, play cards, and laugh a lot. We did not break this time-honored practice. The evening never cleared, and- Bob went home. at about midnight, but only after he had beat us all in a 4 hour card game. That's one game!

As the Sun rose on Sunday morning we Hit the trails once more. We hiked virtually every trail here, and enjoyed the landscape as ,ve went.

Joe showed up once more to do some more work around the clubhouse.

The breeze was light, and today's high was in the 50's. A beautiful bright November Sun was our constant companion throughout the day. It was a great day to relax, hike and explore Arunah. To top it all off, our day ended with my trip to the top of Spruce near the Observation clearing for a view of the neighboring hills and valleys. WHAT A VIEW!

It was a perfect November weekend.

My brother Dave enjoyed it ALL. Carl's favorite part was the observing, and of course the card game. I also enjoyed it ALL, but my favorite part was the view from atop the Spruce. I've never been much of a card player.

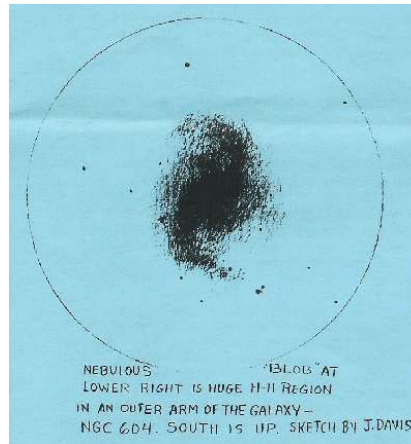
To wrap it all up with one thought, we accomplished what we initially planned, and for all of us, we could think of no better way to spend a perfect November weekend.

We'll be back again soon.

DEEP SKY -THE OBSERVERS NOTEBOOK

by John Davis

Darkness envelops the stillness on the Arunah Hilltop, and thousands of points of light begin to punctuate the indigo velvet sky. Out there, spanning incomprehensibly vast reaches of space π where distances sometimes are not even measured in light years, but in megaparsecs- a dim glow, shimmering with its ghostly glimmer and yet with discernible dimensions, after a journey of over two million years reaches our retina from the confines of the telescope eyepiece. These photons alone arriving from the almost face-on galaxy M33, or "The Pinwheel" in Triangulum, shining at mag. 5.7 with a low surface brightness-not a point source, as from a star, but the combined light of perhaps 150 billion suns, lying out 2 1/2 million light years in space, approaching a megaparsec. This relative neighbor of our Milky Way is within the gravitational influence of M31, the great Andromeda Galaxy and a member of our Local Group. Not a giant like M31, in fact at about 55,000 light years across, smaller than our own Milky Way, M33 is a classic spiral galaxy (Sc) presenting to us a definite arrangement of Spiral arms positioned nearly face-on. Though much less obvious than those of M51, the "Whirlpool" galaxy, these spiral arms of M33 were readily visible in the 17 1/2" 'scope at Arunah Hill.

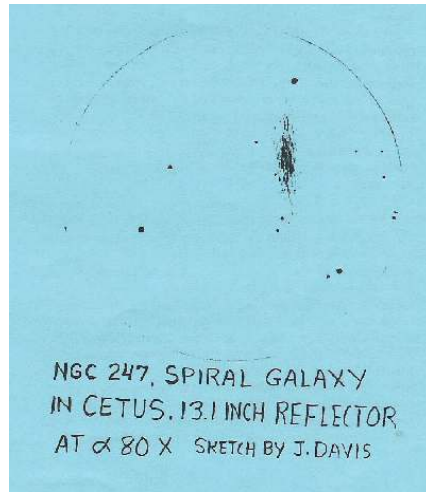


Not being into astrophotography, I sketched the galaxy, as I occasionally do when impressed with various deep sky objects. It is shown here alongside three other impressions of the deep sky... sketches of objects seen in Arunah Hill telescopes over the last few months.

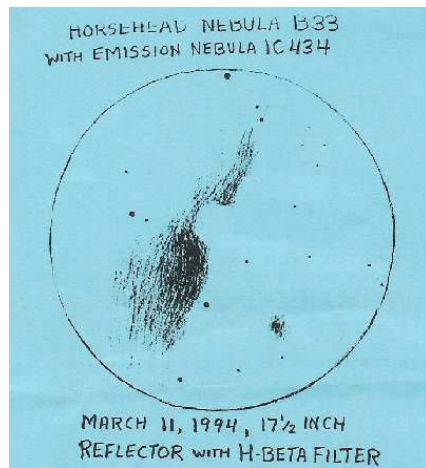
Two of these represent spiral galaxies in the Sculptor group, another neighboring aggregation lying out at a distance of about 3.1 megaparsecs-or 10 million light years. NGC 253 is a favorite of amateurs, being large (25'x7.4') and bright, (01.7.1) inclined at about 13 degrees to edge-on much like Andromeda, an in moderate sized 'scores (10" and up) suggesting a mottled texture in dark skies. Just under 2 degrees to the SSE look for the prominent globular cluster NGC 288.



Nearby NGC 247, a mere 4 1/2 degrees to the north in Cetus, and just 3 degrees below Beta Ceti (Diphda) is a different story. A large spiral also inclined about like M31, it glows at m.8.9. However its size (20.0'x7.4') combined with low surface brightness make it a tough object to pick out, but in dark sky you can find it using low power. Both these galaxies lie far enough south to make them less than easy unless you have a fairly dark sky. Joe Zuraw and Ed Faits in whose 13 inch 'scope these galaxies were viewed, are involved in an ongoing project of hunting down objects of far southerly declination in our dark Arunah Hill skies.



The "Horsehead", an extreme challenge in any sky and 'scope, was observed last March at Arunah Hill by a group of us during our Messier Marathon using a H-Beta filter on the 17 1/2 inch 'scope. The sketch here is a second attempt, as the original one in our Spring newsletter did not have sufficient contrast to reproduce well in print- so what you see in this sketch of the Horsehead' Nebula (B33 with IC 434) in Orion is of exaggerated contrast to its actual very subtle appearance in the scope. The H-Beta filter "brought it out", though some used averted vision to glimpse its shape.



Actually the number of fascinating deep sky objects which beckon those of us with amateur 'scopes is almost limitless, a fact which is increasingly obvious after an hour or two of observing on a good night at Arunah Hill. All of these sketches were done to record what impressed me at the time I observed them. And I guess that is the whole point of the piece...many of us are awed or impressed by what we see out there in the vast reaches of the universe through our modest amateur telescopes. Why not record them with a pencil sketch-or if so equipped, with an astrophoto.

If you have observed from Arunah Hill and seen an impressive object or have an observation from your favorite dark sky site, we will welcome sketches or photos of deep sky objects you send us. We will include them in this column in upcoming issues. Give us details of equipment used: i.e., telescope, aperture, photo equipment, film, sky conditions, etc. Often its fun comparing notes and these sketches with our own observations and impressions of the same object. We will try to use most of them and look forward to your participation in what we expect will be an interesting column for Arunah Hill members and observers. "Clear Skies", and " Happy Hunting"!

Tales From A Tall Hill

By Joe Zuraw

This new column is dedicated to the incredible but true feats of observing, strange phenomena and dumb-luck "happenstance" observations. Readers are encouraged to send in short stories of their own.

It rose rapidly out of the south like a Cyclopean star. Brighter than Venus it attracted my brother's attention about 10' above the horizon.

"What's that"? he exclaimed.

I immediately dismissed it as an airplane's landing light; there was no sound and it was moving too fast.

"It's zig zagging!": my sister-in-law observed.

"Impossible" I muttered, having decided on a massive satellite with sunlight reflecting off its solar panels. "That must be an optical illusion."

All the observer's at Arunah Hill that night stood transfixed as the brilliant, flickering, zig-zagging orb climbed toward the zenith.

Then suddenly without warning, it flashed like a strobe light, brilliant for an instant revealing the full moon in intensity.

Then it rapidly dimmed and proceeding in a straight course, it disappeared into the north.

What had we witnessed? Aliens from another galaxy? Secret Government experimental aircraft?

Two weeks later at an Amherst Astronomy Club meeting, the riddle was solved. Someone was talking about the multi-billion dollar communications satellite that was unsuccessfully launched from the Cape. Its guidance system failed and ground controllers were forced to self-destruct the rocket eight minutes after launch and 2800 miles down range. The satellite never reached the circumpolar orbit intended for it.

Observing at Arunah Hill, we were in just the right place at the right time to "watch the fireworks!"



OMEGA CENTAURI A SOUTHERN SHOWPIECE FROM ARUNAH?

By Shawn Whitney

A long time ago on a mountain undei' our feet, geologically just a couple of seconds ago, southern New England was finally starting to thaw. The last of the Ice Ages, the Wisconsin, was ending. The thick mantle of Continental glacial ice was melting. For a long time after the ice sheet had finally melted some of our brother mountains to the north still supported mountain glaciers of their own. This is evidenced by examining the huge glacial cirques on such mountains as Washington and Katahdin.

Lichens and mosses were pioneering the barren landscape for the onslaught of boreal flora advancing upon us from more southern areas. A natural morainal dam located at Rocky Hill, Connecticut hacked up the waters of the Connecticut River Valley and formed Lake Hitchcock. It was 14 miles wide by 160 miles long and such areas as Amherst Center and the Holyoke Range were islands.

Boreal flora such as Spruce and Pine were the first pioneer trees. On the heels of these trees were Birch, Hemlock, and lastly Northern hardwood species. This all took place over a brief few thousands of years. Native fauna such as Mammoth and Caribou fed off the flora of the time, including the tundra grasses which once were abundant across the northern border of the U.S.A.

The morainal dam finally gave way and the frigid waters of Lake Hitchcock found their way south to the coast. Everything was changing. The climate was continuing to warm, and some species such as the Woolly and Imperial Mammoths, the Saber'-toothed Tiger, the Giant Ground Sloth, the Giant Beaver, to name just a few, disappeared FOREVER from this Earth. Not all of these creatures resided in New England, but that does not matter. These were residents of our continent, and all of them are gone.

Far above us the sky was very different from what it is now. I'm sure that we would be able to pick out many familiar stars and constellations. They would appear slightly altered from the way we see them today. From the end of the last Ice Age till now we are only talking of a span of time of some 10-12,000 years.

At the end of the last Ice Age Polaris was not the pole star, but it's time would come. During this time of warming, the pole was shifting further and further away from the bright star Vega. In turn, faint stars in Hercules, Bootes and beyond had their time as pole star. The climate was continuing to warm.

See Diagrams on following page

Omega Centauri (NGC 5139) would have been well placed for observation from any site here in Southern New England. I would mention more objects visible during this span of time, but I think you all would have more fun doing the research of your own.

My, have things changed! Compared to the end of the last Ice Age we are basking in comparative warmth indeed.

The ice sheet which once extended as far south as Long Island is gone for NOW. Cold waves no longer crash against the forbidding shores of Lake Hitchcock. No longer do herds of Caribou graze the tundra grasses here in New England.

Lastly, no longer does Omega Centauri stand well placed for observation above our southern horizon.

Omega Centauri is the grandest of all globular clusters in the sky. It is also one of the nearest to us. It also has a whopping magnitude of 3.7.

The May, 1994 issue of Sky and Telescope, Deep-Sky Wonders tells us that it is possible to still see Omega Centauri from as far north as 4 1/2 degrees North latitude. 43 degrees N. passes though souther New Hampshire and Vermont. 42 1/2 degrees N, is the top border of the Goshen topographic map 1:25000 scale metric. Arunah is 1/3rd of the way down the western edge of this map.

With each passing year, decade and century the pole is continuing in it's 26,000 year cycle of change. In a few years, Omega may not be visible from Arunah, even with atmospheric refraction.

Position of Omega Centauri

1950	13h	23.8m	-47' 02'
2000	13h	27m	-47' 29'

Now is the time to go for it!

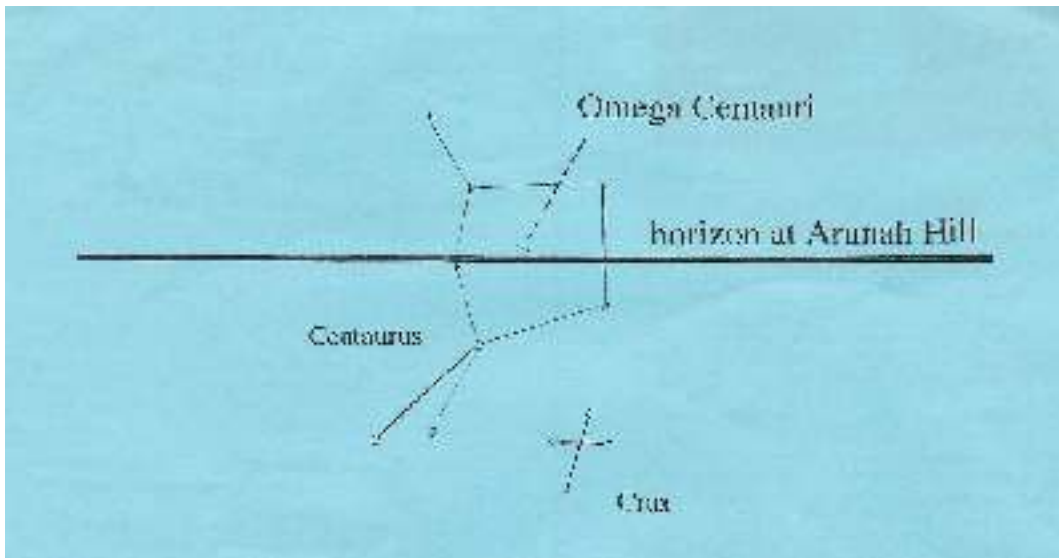
Joe Zuraw is currently the pioneer of these efforts here at Arunah. His efforts have even made it easy to climb a spruce tree on Arunah for a clear view of that distant southern horizon.

Omega Centauri will not be easy, and it could very easily prove to be the most difficult object which we could ever hope to see from Arunah. But isn't an observing challenge part of what amateur astronomy is all about?

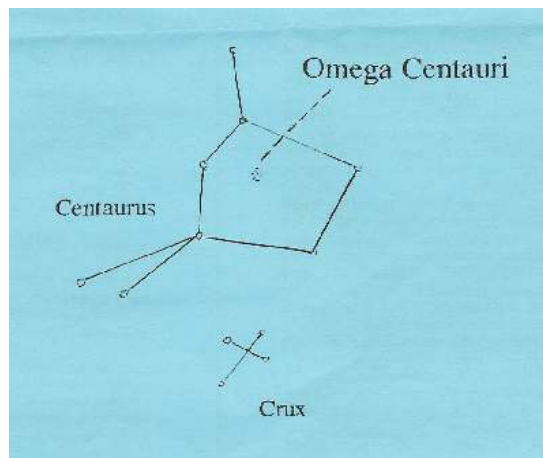
Arunah Hill is also perfectly placed for our attempts to see this southern deep-sky object.

Stay tuned to see if we attain our goal. Or better yet, why not plan to spend a little time with us in our hunt for the horizon appearance of Omega Centauri!

Shawn L. Whitney



Notice the dramatic shift north of the constellation from precession!



8000 B.C. southern horizon at Arunah Hill