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PRAIRIE
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Our next meeting will be on Tuesday, January 25, at the Old Science Building, Wesleyan University. There will be more discussion on our own observatory (SEE SPECIAL SUPPLEMENT NUMBER ONE) but any topic a member wishes to bring up will be discussed. So come to the next meeting for discussion, reports, and refreshments.

Probably the most important accomplishment of our last meeting was the reading of our incorporation papers. This makes it possible for us to make money for our telescope project and stay on the good side of the Department of Internal Revenue.

THE SKY MONTH BY MONTH
by Tom Journey
for January
THE PLEIADES CLUSTER

Every winter, since astronomical records have been kept, the Seven Sisters, or Pleiades Cluster has been visible. This striking cluster is located in the northwestern corner of Taurus the Bull on December nights. It rises just before sunset and is high in the eastern sky by the end of twilight.

Since many of the constellations originated in myths: Greek, Roman, and many others; the Pleiades is no exception.

The Pleiades were the daughters of Atlas, of which there were seven. Their names were: Electra, Maia, Taygete, Alcyone, Merope, Celaeno, and Sterope. Orion (the Hunter) had pursued them but never succeeded in catching any of them. Finally, Zeus, king of the gods, pitying them, placed the Seven Sisters in the heavens as stars.

Although there are seven of the sisters, only six are actually visible, but the seventh may be seen by persons with especially keen eyesight.

In various other cultures, the Pleiades may be called by other names such as: Seven Doves, Seven Brothers, Seven Maidens, and the Hen and Seven Chicks.

Greek myth has said that one of the sisters made herself invisible out of shame for having loved a mortal. This myth has given rise to a popular myth that there were seven bright stars in the group during some period in history. Plione, which has undergone slight changes in its brightness, may once

have been much brighter. The number of stars visible in the cluster is probably more than 3,000.

An early study, made by R. J. Trumpler in 1921, identified 246 certain members of the Pleiades. But other investigators have found more members. The Danish astronomer, E. Hertzsprung reported, in 1947, a photographic survey in which he identified over 3,000 stars brighter than seventeenth magnitude as other members of the group.

The Pleiades is perhaps one of the most interesting in the sky. It is well worth watching.

Note--THE SKY MONTH BY MONTH will be carried all year as an article. Each month a different object visible for that month will be used.

Any announcement a member wishes printed shall be run in the Bulliten. There is no charge.

Be sure to read the special supplement in this issue.

Any article written by a member will be appreciated. Please send to Ed Woerner or Jess Williams. Cartoon ideas too.

ME TO THE MEETING!
7:30 - WESLEYAN - JANUARY 25, 1966

SPECIAL SUPPLEMENT NUMBER ONE
OBSERVATORIES

Note--On the afternoon of December 23, I found a letter from Tom Journey. Upon opening it I found several pages devoted to letters and drawings of observatories, based on a series of inquiries made by Tom Journey from Albuquerque, New Mexico. We wish to thank Tom for the time he spent on our Club. Here is what I received:

Since the Prairie Astronomy Club is planning to construct an observatory sometime in the future, which will probably range from a 6" to a 12" telescope, I thought it might be helpful to write to some amateurs who represent this range. The first of these letters is published for the first time in the Bulletin. It is by Raymond R. Dudley, Jr., of 2878 Anza Lane, Costa Mesa, California.

"Dear Mr. Journey:

I am glad to hear that the Prairie Astronomy Club is contemplating the construction of an observatory. I can assure you that this will certainly make your observing programs easier and more productive. I shall attempt to answer your questions in brief, and of course these things are largely a matter of personal opinion.

Where a reflector is used in a small observatory, I think that the roll-off roof type is the better choice. A dome almost always is a little bit warmer inside than outside, especially if a number of people are inside. This difference in temperature causes convection currents at the slit and also keeps the optics from maintaining pace with the change in outside temperature. The only way to really solve this problem in a dome is to have a very large observatory relative to the size of the instrument and number of the people using it at any one time. A roll-off roof is quicker to use in that you don't have to reset the dome everytime a new object is placed in the telescope, and it allows full appreciation of the heavens in place of the rather restricting view through a narrow slit. One other thing also, the telescope may be sighted on objects by visual means while a dome almost always demands the use of setting circles for fainter things.

Of course a dome has its advantages too. If your proposed observatory location is in a large city, the dome helps to keep light (both sky fog and neighbor porch type) out of the observer's eye. A dome also helps to keep the instrument from shaking in a wind, but observations or photography is usually not very good when the wind is blowing anyhow. A dome will permit the instrument to reach much lower in the sky, but remember that the seeing is usually very bad near the horizon.

I don't have any formal plans to my observatory but I have enclosed a rough sketch to show you some of the details. In particular, I think you will be interested in the method of supporting the dome; a problem usually arises here when the transition is made from a square building to a round dome.

Construction costs will vary a great deal from one region of the country to another, but I shall try to give you a general breakdown of my expenses. INCIDENTALLY, I built the building myself with the exception of concrete work for the slab, walks, and telescope pier. The dome was purchased completed and fully assembled from the Observa-Dome Company in Jackson, Mississippi; it is interesting to note that this 9 foot diameter size will just fit in a standard railroad box car and consequently freight is quite reasonable.

Schedule of Expenses

Concrete Work (Walks, Slab & Footings, Pier)	\$310.00
Building Material (Wood, Nails, Paint, Misc.)	\$400.00
Dome (Manufacturer says price will increase)	\$650.00
Rail Freight (Jackson, Miss. to Santa Ana Calif.)	\$58.00
Trucking (To my home from the Freight Office)	\$33.50
Crane (To lift dome onto completed building)	\$10.00
Total	\$1461.00

I should like to emphasize that some of these expenses were made with me doing part of the work or helping as much as I could, with the exception of the concrete; in the case of the concrete I had a contractor called in to perform the entire task.

In spite of the criticism that I made concerning a dome, I think my observatory is a success. My primary interest is the observation of variable stars. I have done some lunar and planetary photography, but this is mainly just to develop the technique in case there was a need to use it later on.

Please feel free to write again if there are any more questions, and I would be most happy if you or any of the members of the Prairie Astronomy Club would drop in for a visit if you should, by any chance, be in the Los Angeles area.

Very Truly Yours,

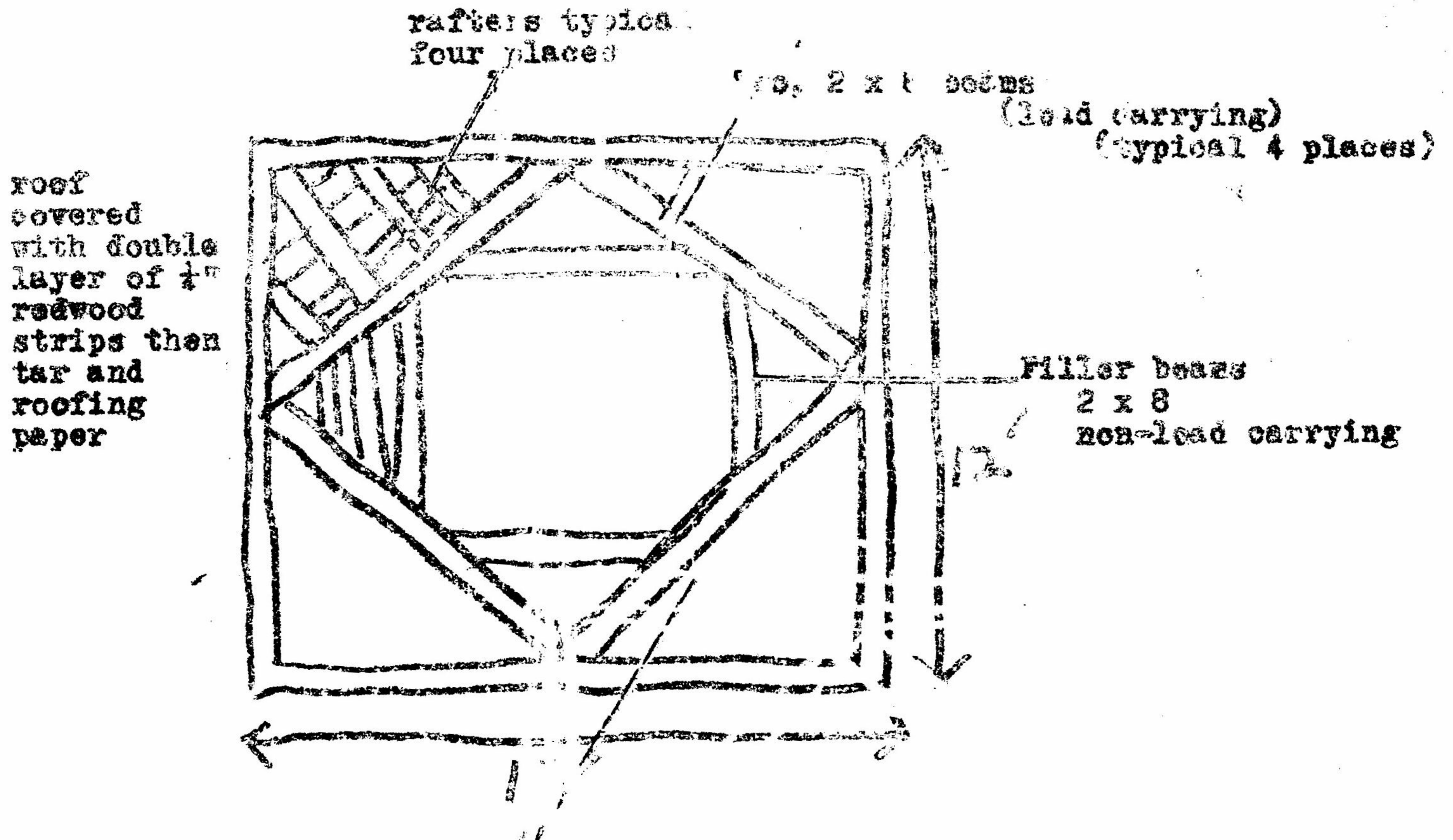
Raymond E. Dudley, Jr."

Incidentally, Mr. Dudley owns a 10 inch Cassegrain reflector, made by Cave Optical Company. He was featured in Sky and Telescope, for May, 1965, under the heading "Five More Amateur Observatories," pages 285 and 286.

Note--Mr. Dudley's drawings are on the next page.

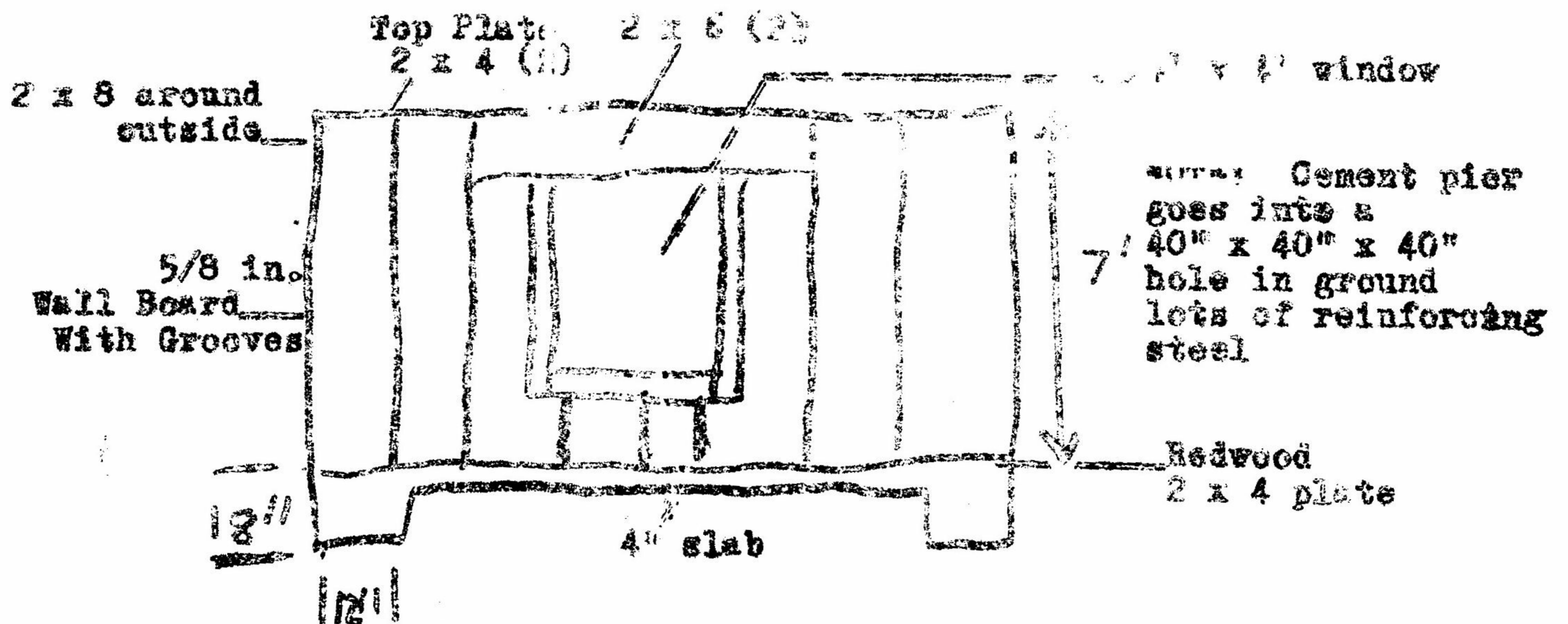
OR INDIATOR
Raymond E. Dudley Jr.
Sketch of selected details

TOP VIEW OF DOME ROOF



Dome weight (Dome weight is 6000 lbs)

TYPICAL WALL FRAMEWORK



Richard H. Marx, 8 Melissa Lane, Old Bethpage, NY, sent the second letter, of which part of it is as follows:

"The greatest argument for a roll-off roof is that it is easier to build and probably cheaper to build than a dome. My own talents include only a hammer, saw, and a shovel, therefore I deemed it wise to avoid curves. Your own labor pool may include some members that are more fortunate. While a dome gives light and wind protection, the roll-off gives a view of the entire sky. This may be an important factor for you, as while one member is at the eyepiece, others may find the night sky more stimulating to gaze at than the inside of a dome.

My shed is only 8 feet square, which is adequate for my small reflector, but of course yours would be much larger. I used fiberglass sheets for sides and roof because the shed is partially cut into a hill and I wanted to avoid rotting of the underground portions. However, I found to my great dismay, that fiberglass sheets cost about 12 dollars each and that I needed twelve of them. Considering the increased size of your projected observatory this might really run up. Cinder block might be a good choice for the sides in your case. However, for the roof the fiberglass turned out to be an excellent material. Its light weight makes it easy to build the flat roof; its strength makes it capable of holding great weights of snow, and its infra red capacity keeps the shed from getting too hot in the daytime. When I roll back the top in early evening the mirror requires no prolonged time to cool and stop shimmering.

It seems to me that many of the pictures of the observatory sheds that I have seen have sides which are so high that the telescope can't be lowered to anywhere near the horizon. I would rather have less protection from wind for myself and have the increased angle of view for the telescope. If you make the walls high you have to make the pier high, and if that is done you sacrifice steadiness and have to stand on a stepladder in the bargain. My telescope must be placed in a horizontal position to be able to close the roof over it, so you can see that I went as far as I could in order to keep the sides low.

Unfortunately, I have no plans to send you, as I really didn't work from plans. The structure is simply a square, and the rails behind it are the same length as one of the sides. The Track is galvanized channel iron, the wheels are nylon rollers. All of the lumber is two-by-fours. The foundation, to use a dignified term, is a square of cinder blocks laid end to end. Two-by-fours are bolted to them by pouring concrete into some of the holes around big bolts. Then the entire structure rises from the sill which is so formed. I recently poured a concrete floor for the shed. This was done by pouring the concrete into frames made of 1 x 2 spruce, in squares no larger than 2 feet each. This allows plenty of room for expansion due to freezing of the ground. So far there is no observable buckling. The center of the floor, where the pier is located, is not continuous with the rest of the floor.

I hope this information will be useful to you, and I hope to see a picture of your completed observatory in Sky and Telescope in the near future.

Yours truly,

Richard H. Marx"

These two letters presented two sides of an argument for a roll-off roof type of observatory or a domed type. It's up to you to weigh each side.

Some time ago, at one of our club meetings, both of these letters were presented in part. They are now printed in a longer, more complete version.



The Presidents Report

This time of year the Milky way offers some of the finest deep sky objects, all the way from Cassiopea to South of Orion. Also this time ~~OF YEAR WE HAVE THE~~ worst kind of weather. If it isn't bitter cold its cloudy or the snow banks are too deep in our favorite viewing spot in the back yard. Dont let all of this keep us from our Astronomy. Now is a good time to read that book we put away last spring. Also "lets" get out those Sky and Telescope Magazines that we didn't have time to read last summer. I cant think of a nicer way to spend a cold, snow, y winter evening than to read a good Astronomy book or look over those back issues of Sky and Telescope. Then when the Sky clears and the weather warms up for a night or two, we can go out with our scopes with re, renewed interest and the Stars will be there with all their GLORY just waiting for us.

Bring your Jan Sky and Tel Magazine to our Jan 2nd Meeting. I want to go over the Graphic Timetable with you.

Earl Moser Pres.