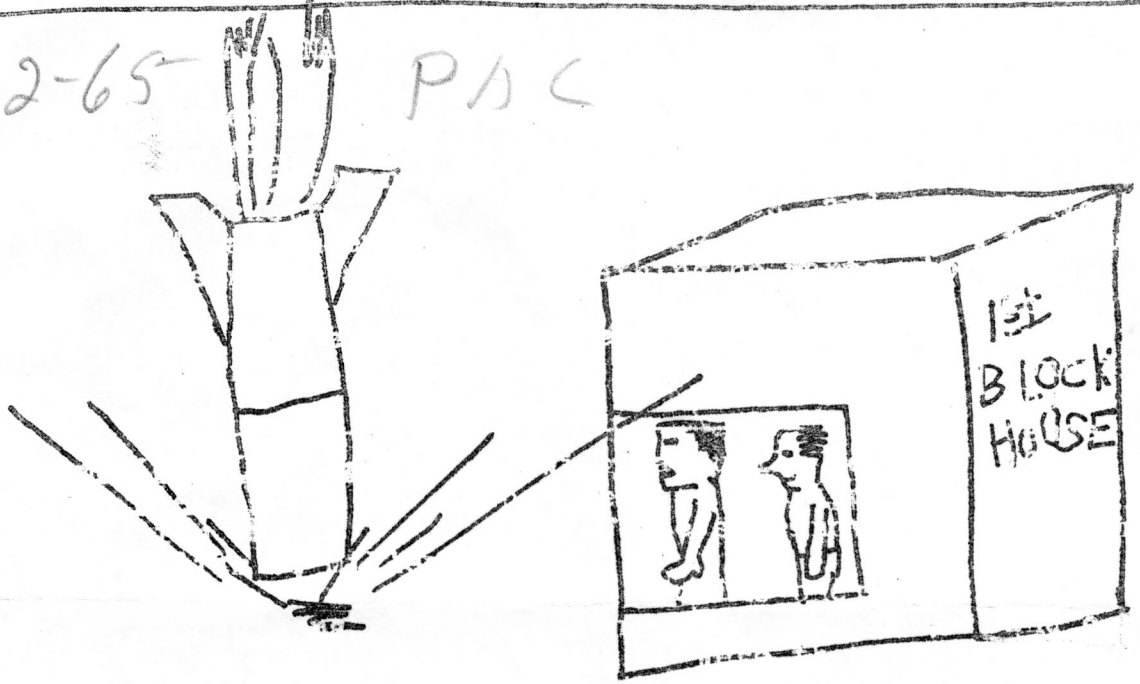
at the astronaut (~~trust~~) school

12-65 PSC



"Can't Morrisey do anything right?"

Prairie
Astronomy Club
Next Meeting Dec 28
Old Science Bldg
Wesleyan University

"Wha da ya mean this is private property?"

ED WOERNER

PRAIRIE ASTRONOMY CLUB

ASTRONOMICAL ALMANAC

Our next meeting will be at the Old Science Building on the Wesleyan campus, on Tuesday, December 28, at 7:30. There will be more discussion on our own observatory, reports, discussion on any subject a member wishes to bring up, and, of course, refreshments. So bring a friend and come to the meeting

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EXPLODING GALAXIES
conclusion by Sir BernarNovell

One branch, which includes the Milky Way and M-31 (Andromeda), had a nucleus with increasing degrees of openness of the spirals, as already described. The other parallel branch also showed increasing openness of the spirals but the nucleus was different. It was, in these types, consisting of a dense bar with the spiral arms emerging from the extremities.

Most of the galaxies which have been studied are found to fit well into this classification. Of the galaxies so far catalogued, eighty percent are spirals and seventeen percent elliptical. About three percent show no obvious structure. These are the irregular galaxies, and the galaxy which exploded was one of them. For a long time, there was a general belief among astronomers that Hubble's sequence from ellipticals to spirals represented some basic evolutionary sequence of galaxies, with the ellipticals representing ancient galaxies devoid of gas, where all star formation had ceased.

Recently, the outlook on this problem has changed. We have no real evidence today that any particular type of galaxy arises from another type by evolutionary processes. The spiral nature of our own Milky Way must have been determined nearly ten billion years ago when our galaxy began to condense from primeval gas Similarly, the nature of the irregular galaxies, including the one which exploded, was determined at the same time, and there is no reason to believe that the Milky Way will evolve into a system with explosive properties.

Of course, we do not really know why such a catastrophic event occurred. The galaxy in question is ten million light-years distant from our own Milky Way and the astronomer's interpretation of the photographs is that 11½ million years ago, nearly six million suns in the central regions of the galaxy exploded. These photographs show the explosion when it was already about 1½ million years "old." The debris and turmoil of this event are seen with the material of the exploded stars still moving outward from the central region of the galaxy at a speed of 250 miles per second.

Of course, explosions of individual stars in galaxies are not at all uncommon. In our own Milky Way, there are several well-known cases: the most famous is the Crab Nebula, the star which was seen to explode by Chinese astronomers in 1054 A.D. Such an event, in which the whole mass of the star suddenly explodes, is known as a supernova, and the Crab Nebula is the remnants of the original star.

The number of stars which become super nova is uncertain -- estimates range up to a few hundred a year. In any case, the explosion of a few individual stars scattered through out a galaxy is quite different from the explosion of the galaxy itself. In this particular case, the six million stars that exploded simultaneously of in close sequence represented [illegible] of its total

mass. Even by the standards of the cosmos, it is clear that an unusually dramatic event occurred 11½ million years ago, and it is natural to ask if there is a chance that a similar explosion could occur in the Milky Way, and, if it did, what would happen to our sun, earth, and the planets?

The relatively orderly structure of the Milky Way is radically different from that of the irregular galaxies. Moreover, as we have seen, there is no evidence of any evolutionary sequence in galaxies which might lead us to suppose that the conditions which led to the explosion will ever be reproduced in the Milky Way nucleus. If such a gigantic explosion did occur in the central regions of the Milky Way today, then another 30,000 years would elapse before our descendants could have any knowledge of it.

After another 1½ million years, the debris from the catastrophe, traveling at a few hundred miles per second, would have reached out only one-third of the distance from the seat of the explosion to the position of the sun. Five million years after the explosion, the debris would envelop the solar system, but by that time the attenuation would be such that it seems unlikely that either sunlight or starlight would be appreciably obscured.

There would be, however, a far more serious danger. The processes which occur in the supernova remnants are believed to be those which produce the energetic cosmic radiation pervading space. We live, and indeed have evolved, on earth with the radiation which bombards us from the Crab Nebula and the other supernovae in the Milky Way, but a galactic explosion might well result in a millionfold increase in radiation density.

However, since the danger would be apparent for several million years before the impact, there is little doubt that the human race would be able to adapt itself to these new conditions or take other steps to deflect the radiation away from earth.----------END

Up to this point this news letter was prepared by Steve Hunkee And Ed Woerner.

Pres. Earl Moser said we would not have a report from him this month but would make up for it in Jan. 1966.

On this 21st day of Dec. 8 p.m. the sky is beautiful, Jupiter, Venus, Milky way, Pleades, Orion, -You name it, its there or will be.

They say, Pete Schultz is Home, and we are looking forward to seeing and hearing from him. While were on the subject, how about Jim Hoskins. If he would show up, that would be old home week.

We will try and arrange to have sonthing to satisfy hunger and thirst.

See You, Jess Williams Secy.