



It's a bird, it's a plane, it's Andromeda

Ever looked skyward and wondered, "How far can I see?"

November evenings offer the most distant object that can be seen with the naked eye — the great galaxy in Andromeda, according to University of Michigan astronomy professor Richard G. Teske.

One of the brightest and nearest of the galaxies, Andromeda is made up of billions of stars held together by their mutual gravitational attraction, he says.

"OVER TWO million light years away, this fine object appears as a hazy oval patch of light that is nearly straight overhead by 9 p.m. in mid-month."

"Seeming to be about a quarter the size of the full moon, the galaxy is readily located," Teske says, "because it is halfway between the W-shaped constellation of Cassiopeia and the star in the northeast corner of the square of Pegasus, called Alpheratz."

"The galaxy is even easier to find with binoculars," he notes.

"Andromeda is a spiral galaxy, a

highly flattened star system with trailing spiral arms, slowly rotating like a pinwheel in space. It is more than 50,000 light years across."

Also a flattened spiral and twice as large as Andromeda is the Milky Way galaxy, of which our sun is but one ordinary star out of around two hundred billion, he adds.

"As we look out at Andromeda through a veil of stars belonging to our own galaxy, we see it partly edge-on, so that it appears to us as an elongated oval. Our eyes perceive the combined starlight from only the brightest central portions. Its fainter star clouds are revealed on photographs as extending on the sky to a width of more than three times the size of the full moon," he explains.

"We should remember as we view Andromeda that we are looking backwards more than two million years in time. The light from events that took place there long ago is now reaching the Earth."

The U-M astronomer points out that "the great star systems that are called galaxies seem to be the basic struc-

tures of the universe. As we peer deep into space with long exposure photographs made with the largest telescopes, we find the galaxies sprinkled everywhere, beyond counting."

HOW FAR the most distant ones might be is not known, but Teske says "some present studies indicate that the universe could be infinite in extent."

Because a knowledge of the nature of the distant galaxies is important to our understanding of the universe as a whole, astronomers have studied the

Andromeda system and other galaxies, and have compared them to our Milky Way, he says. "They find that Andromeda and the Milky Way are typical of spiral galaxies throughout the universe."

"Andromeda and the Milky Way are the two largest members of a cluster of around 20 galaxies, called the Local Group, which spreads over about three million light years of space," he notes.

"The Local Group, whose members remain partners bound together by gravity, is only a minor cluster."

Sci-fi writer Niven opens OU lectures

Prize-winning science fiction writer Lawrence Niven opens the 1979-80 President's Club lecture series at Oakland University on Nov. 14-15.

The free public series begins with the 1979-80 theme of "Human Values and the Extraterrestrial Environment."

Niven will lecture at 8 p.m. on Nov. 14 on "Making the Whole World Rich" and at noon on Nov. 15 on "Staying Rich." Both lectures are in the Gold Room of the Oakland Center.

Niven is the author of numerous fic-

tion works of every length. Among his many prizes are science fiction awards for the best short story, "Neutron Star," best novel, "Ringworld," and best short story, "Inconstant Moon."

Other lectures in the series are P. James Peebles, physics department, Princeton University, Jan. 17; James L. Christian, philosophy department, Santa Ana College, March 19; and Stephen J. Gould, geology professor, Harvard University, April 3.

Winter tips for anglers

Fishing fun doesn't have to end with the onset of winter.

There are many things you can do while awaiting the return of warm weather that will add enjoyment to your fishing next spring.

Trip planning is an excellent winter activity. Writing to tourism and fishing agencies in areas where you would like to fish.

Learn the best time to make a trip for the particular kind of fishing you want to do.

One special winter activity is building a new fishing rod.

Kits are available from sporting goods dealers, through mail order outlets and from fishing specialty shops.

Custom building your own fishing rod is easy, and will help occupy the

slow days of winter.

When you finish, you'll have a valuable piece of fishing equipment at considerably less cost than if purchased ready-made.

Many anglers use their time during winter to the flies, make lures and overhaul their fishing tackle.

Again, fly tying kits, lure kits and books on how to do these things are commonplace items at any good fishing tackle outlet.

Other ideas for winter-bound fishermen include fixing up your boat to be more functional next spring, attending a local course in boat handling and safety, or taking Red Cross first-aid training.

Also visit your local marine dealer to see what's new and to swap lies about the big fish you didn't catch last season.

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