

—Dietz on Science—
FEWER COMETS HAVE APPEARED IN LATE YEARS

None in Naked Eye Class Has Been Seen Since 1911.

BY DAVID DIETZ
Scripps-Howard Science Editor

It is beginning to look as though 1933 would end without that big comet for which astronomers are looking. Of course, Santa Claus might bring it, but there's no advance notice if he is planning to do so.

In 1931 I wrote that astronomers were on the lookout for a big comet, that one was overdue. The odds of the law of probabilities and that many astronomers believed that it might show up before the end of the year. It didn't.

In 1932, I reported that many astronomers felt that since it didn't show up in 1931, it might in that year. But it didn't. And now 1933 is almost over and still there has been no big comet.

The last "naked eye" comet (that is, a comet big enough and close enough to make an impressive spectacle to the unaided eye) was seen in 1911. The early part of the present century had three fine naked-eye comets, Moorehouse's comet in 1910 and Brook's comet in 1911. These were magnificent sights and attracted great attention.

But the century to date has had a shortage of big comets.

Astronomical records reveal that about 400 comets were seen before the invention of the telescope. Obviously these all had to be naked-eye comets. The records go back to about 1000 B. C. The telescope was first used by Galileo in 1609.

Average Fifteen a Century

This means that in twenty-six centuries, therefore, there were 400 naked-eye comets. This is an average of fifteen or sixteen to a century. One out of the present century is gone and we have only had three. In other words, we are two behind schedule.

Comets which are visible in the telescope are not unusual. About 500 have been recorded since the year 1600. About five of them a year is an average, although eleven were discovered in 1925.

When a comet is first picked up by means of a telescope, it appears only as a star-like spot of light, usually with a fuzzy or hazy appearance.

This will surprise many people who always think of a comet as having a long tail. The tail develops as the comet approaches the sun. As the tail grows longer, the head grows smaller, making it apparent that the tail grows at the expense of the head.

Tail Has Great Length

The tail of a comet always points away from the sun so that when the comet is receding from the neighborhood of the sun, the tail does not trail behind the head, but extends in front of it, stretching out in the same direction that the comet is moving. As the comet fades into the distance, the tail grows smaller again and finally disappears.

The head of a comet is divided into two parts: a small, bright center called the nucleus, and, surrounding this, a fuzzy, hazy mass called the coma. The volume of a comet is enormous. The diameter of the coma will range from 30,000 to 150,000 miles as a rule, although the nucleus may be only 500 miles

'DEVILS ISLE' WARDEN



CITY ELKS TO HOLD MEMORIAL RITES SUNDAY

Otto P. Deluse Will Be Principal Speaker at Annual Session.

Otto P. Deluse will be the principal speaker at the annual memorial services for deceased members of Indianapolis Lodge 13, Benevolent and Protective Order of Elks, Sunday night at the Antlers.

Music for the service will be provided by the Montini ensemble.

The French knew the Ohio river as "La Belle Riviere."

with Miss Ruth Otto and Raymond Jackson as soloists.

Arrangements are being made by a committee composed of John D. Morris, John Lauck Jr., Fred Bonnemiller, Fred McNeely, Timothy P. Sexton, Joseph J. Bauer and George W. June, appointed by exalted ruler William J. Fahey.

Exalted ruler William J. Fahey.

JEWETT WILL SPEAK

Sons of American Revolution to Convene Tuesday.

Charles W. Jewett, former mayor, will be the principal speaker at a luncheon of the Sons of American Revolution members Tuesday in the Spink-Arms, honoring past presidents of the organization. It was announced today by Cornelius F. Posson, past president, who will preside.

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STATE NATURE STUDY CLUB TO ELECT OFFICERS

Session to Be Held Here in Cropsey Hall at Library.

Motion pictures of activities of the Nature Study Club of Indiana will be shown at a meeting in Cropsey Hall, Central library, at 7:45 tomorrow night.

Officers for the new year will be elected at the meeting. Present officers are John W. Noble, president;

\$275 in Rugs Stolen.

Theft of rugs valued at \$275 from the garage of Horace Goodwin, 24 South Colorado street, was reported to police yesterday.

ANDERSON MAN DIES AT WHEEL OF MOVING CAR

Stricken With Heart Attack; Brother Grabs Wheel, Averts Crash.

Stricken with a heart attack while driving in the 500 block North Rural street yesterday, William Tibbets, 66, Anderson, died at the wheel of his car.

A brother, Clyde S. Tibbets, 42½ East Michigan street, grabbed the wheel of the car and narrowly avoided a head-on collision with another car. Dr. E. R. Wilson,

deputy coroner, conducted an investigation.

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CITY STUDENT CHOSEN

Iron Key Elects H. L. Robinson, Enrolled at Purdue.

By Times Special

LAFAYETTE, Ind., Dec. 1.—H. L. Robinson, Indianapolis, a senior in the school of electrical engineering at Purdue university, has been honored by election to membership in Iron Key, senior honorary society. Iron Key is the leading senior honorary organization of the university and members are selected on the basis of leadership and campus activity.

Church Dinner Plans Announced

A turkey dinner will be served at the Westminster Presbyterian church next Friday night. The public is invited.

across. Most enormous of all is the tail, which may range from 5,000,000 to 100,000,000 miles in length.

Comets have always been the cause of a great deal of superstitious fear. Shakespeare noted the fact when he wrote:

"When beggars die there are no comets seen.

The heavens themselves blaze forth the death of princes."

In 1910, many Chinese villagers shot off fireworks with the hope of driving off Halley's comet. In the United States, many people believed that the comet of 1812 foretold the war of that year and that Donat's comet in 1858 heralded the Civil War.

Comets, however, are still mysteries in many ways. Upon this subject, Professor Charles P. Oliver, president of the American Meteor Society and a world-famous authority on comets, says:

"Most comets still offer some of the most surprising phenomena and perplexing problems in the whole realm of astronomy, and it is not improbable, indeed, that the mystery of their origin and formation will be the last problem dealing with the evolution of the solar system which astronomers of the future will be called on to solve."

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Full Fashioned, first quality!
HOSIERY, Street Floor

EXTRA
Women's New Novelty Collar Sets
25c
Pique—Novelties!
NECKWEAR, Street Floor



What Is Santa Saying?

Penney's Toyland, Dec. 1, 1933.

Dear Kiddies:
I know you TOTS will get a THRILL WITH the new array of TOYS I have FOR you, in PENNEY'S TOYLAND. They're GIFTS that will make anyone's eyes SPARKLE. I invite all of you to come in and see me in my NEW HOME. Love. "SANTA."

What Fun! Look at This

Electric Train

COMPLETE
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• Transformer!
More features! Guaranteed motor! Electric headlight! Shiny, steam-type locomotive!



Use Santa's "Lay-A-Way" Room!

PENNEY'S TOYLAND, Third Floor.

BOYS' UNION SUITS—15% wool.
Long sleeve; ankle length 89c

BOYS' LINED HELMETS—With snap-on goggles.
Warm. Saturday 39c

BOYS' WEAR, Second Floor.

WARM, because they're lined. Assorted colors. Well made.

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Long sleeve; ankle length 89c

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