Dawn: A new day for the whooping crane

"An' the dawn comes up like thunder," said Kipling of the explosive burst of light that heralds a new day in Mandalay. Last week, a different sort of Dawn burst forth, offering the possibility of a new day and new life for the nearly extinct whooping crane. Dawn is the name of a newly hatched whooping crane—the first ever bred and hatched in captivity.

Dawn, born at the Patuxent Wildlife Research Center in Laurel, Md., brings the number of the endangered birds to 74. Three are in zoos, 22 are now at the Patuxent center and the other 49 are part of a wild flock that winters in Texas and spends its summers in northern Canada.

Dawn's birth was not an easy one. The bird's parents were apparently not quite up to proper mating behavior, so artificial insemination was used. The egg from which Dawn hatched was laid last month (SN: 4/26/75, p. 271), but of two previous eggs, one was not fertile and the embryo of another died before hatching.

Ray C. Erickson, assistant director of the Patuxent center, says Dawn (the bird's name may be changed to Don once its sex is determined) is not robust but seems to be doing quite well after the first five days. Based on his and the center's experience with sandhill cranes (another difficult-to-breed species that the center has been successful with), Erickson is optimistic. The first six weeks will be the most critical. If Dawn survives and reaches sexual maturity (four or five years) she/he may eventually be able to produce from five to seven offspring a year for the next 50 years. Dawn's children will then probably be used to start one or two new wild flocks, and the thunderous call of the whooping crane might once again be heard across North America. □

Crack of Dawn for a whooping crane.

Halley's Comet: Don't expect too much

All right, so Kohoutek wasn't exactly the comet of the century. But just wait until Halley's Comet comes back in 1986—*that* will give people something to talk about, right?

Don't be too sure.

More than a decade in advance, two astronomers have issued what amounts to a cometeer's *caveat,* warning that "if you were disappointed by Comet Kohoutek in 1974, don't have high hopes for a fine display from Comet Halley."

There are two reasons that the long-awaited event is likely to be less than spectacular, according to Robert G. Roosen of the Joint Observatory for Cometary Research in New Mexico and Brian G. Marsden of the Harvard-Smithsonian Center for Astrophysics in Massachusetts, writing in the June SKY AND TELESCOPE. The geometry of the comet, earth and sun will be different than it was for the comet's previous visit in 1910. And there's a manmade problem: "How spectacular the comet will eventually appear," the scientists report, "depends to a considerable extent on how serious the problem of light pollution has become by 1986."

One survey, the authors point out, has already revealed that the total outdoor illumination in the United States has increased by a factor of about 10 from 1960 to 1970. "If that same growth rate holds until 1986," they say, "some cities by then will be bathed in permanent twilight, with only the brightest stars and planets visible near city centers and with astronomically unacceptable conditions up to 50 or more miles away."

But even without the national nightlight, the prospect is less than exciting. First becoming visible (to a rather large telescope) in the morning sky of August, 1985, Halley's Comet is likely to get no brighter than about magnitude 4 during its inbound journey, the astronomers maintain, and about magnitude 3 as it leaves the sun. In 1910, it may have become as bright as magnitude 0, but the earth will be nearly three times as far from the comet at closest encounter in 1986. What sightings there are will be best only in the Southern Hemisphere, since the comet's greatest brightness and longest tail will occur when it is well below the plane of earth's equator.

Comets are fickle, Marsden hastens to add, and astronomers are likely to have a field day. (NASA may also send a probe for a close look.) But the general public is likely to be disappointed.

But why such an early warning? Is it fear of the sort of public displeasure that followed Kohoutek's visual fizzle? Marsden says no, and points out that, in fact, the calculations in the SKY AND TELESCOPE article were done well before Kohoutek had even neared the earth. But he leaves the impression that if the *caveat* helps to minimize unwarranted expectations, so much the better. □

Jovian moons: How many more?

It's really a moon. That tiny object discovered last September in the vicinity of Jupiter (SN: 9/28/74, p. 195) is definitely the 13th known satellite of the giant planet, according to its discoverer, Charles Kowal of the Hale Observatories in California. Probably less than 8 kilometers across, it circles the planet every 239.24 days (plus or minus 3.39) at a mean distance of about 11.1 million kilometers (.074266 astronomical units), in an orbit tilted 26.7 degrees to the plane of the ecliptic and having an eccentricity of .147.

Yes, it's a moon all right, as Kowal, Brian Marsden, Kaare Aksnes of the Smithsonian Astrophysical Observatory and Elizabeth Roemer of Kitt Peak National Observatory report in the June ASTRONOMICAL JOURNAL. Yet Kowal wants to know why there aren't a lot more.

"It's a big mystery," he told SCIENCE NEWS this week. The likeliest sources for new, little moons, he says, are captured asteroids and the breaking-up of larger objects. And indeed, the newly discovered satellite follows a path that fits within the limited options for the orbit of a captured asteroid. But, says Kowal, both capture and break-up processes should result in a large number of small moonlets, roughly doubling with each one-magnitude decrease in brightness. In the region of Jupiter's seven outer moons (the inner moons are difficult to search photographically, due to reflected light from the planet itself), there ought thus to be 14 moons in the 20th-magnitude range of the newest one. Instead, the astronomer says, "we've found only one."

One can invent exotic theories to do away with little moons, Kowal admits: An unusually dense region in the cloud surrounding Jupiter during its formation, for example, could conceivably have slowed down small bodies until they spiralled in to destruction, while leaving the larger moons with their greater momentum. But such mechanisms, he says, are improbable.

"We'll probably find four or five more [little moons]," Kowal says, "but not 14." The newest, J-XIII, was discovered because it happened to be in the 20 percent of its orbit during which, as viewed from earth, it was moving most slowly relative to Jupiter. Statistically, the astronomer points out, five times as many observations should yield about five times as many tiny moons. But five times one is five—not 14. □