

ASTRONOMY

Comet to Be Seen in April

Comet Burnham, discovered Dec. 30 last year, will be visible to the eye under good seeing conditions most of April. The comet is moving from south to north toward the North Star.

COMET BURNHAM, discovered Dec. 30, 1959, at a time when it could not be seen directly, will wag its tail at the North Star in April and will be visible for observation most of the month.

Predicted to be of third magnitude which is easily visible with the eye alone, Dr. Elizabeth Roemer of the U.S. Naval Observatory in Flagstaff, Ariz., reported that she does not expect the comet to be that bright but rather about fifth magnitude. An object of fifth magnitude could be seen in the sky as a very faint object when observed with the naked eye if one knows where to look. It would be easier to see with binoculars or telescopic aids.

At the present time the comet is approaching the sun and will reach its closest approach of about 47,000,000 miles on March 20. About April 1, it will have traveled far enough away from the sun to be visible in the morning sky.

The comet is moving from south to north and by the end of the month it will be near Polaris, the North Star. As it travels north across the constellation Aquarius, it will cross part of Pegasus, and before it skirts Polaris toward the close of the month, it will pass by Cygnus, the northern cross, and Cepheus as well as Draco, the dragon.

Around April 30, the comet will go across Ursa Minor, the small bear, which contains Polaris, the North Star. At this time it will be closest to earth, about 20,000,000 miles, and will move very fast across the

sky. It will be seen in the evening sky by this time, Dr. Roemer said.

The Comet Burnham has a tail which seems to be growing. Dr. Roemer said it was about one-third of a degree long last time she saw it, about the middle of February.

Science News Letter, March 19, 1960

ROENTGENOLOGY

Bone Growth Movement Now Filmed with X-Rays

TINY MOVEMENTS that occur during the growth of bones and healing of fractures can now be observed through a new technique involving time lapse X-rays.

Though it has long been known that motion of the broken parts impedes fracture healing, the new method shows among other things that even tiny movements, too small to be detected by conventional X-ray studies, can cause poor bone union.

The method was developed by Dr. Howard J. Barnhard, radiologist at Hahnemann Hospital of Philadelphia and assistant professor of radiology at Hahnemann Medical College.

The new technique, which the radiologist described as "resembling both time lapse and animation movies," involves making X-ray films of a dog's foreleg at four-hour intervals during a period of observation lasting weeks or months. The advantage of this method over the usual interval X-ray

studies is that it affords continuous, regular observation of the bone under conditions where position of the limb and film density can be kept constant.

The interval X-ray films are put together like the separate frames of a motion picture, creating an impression of movement. Since the eye more readily perceives motion than still images, the process of change is actually intensified to the observer. This is the first time that the living animal has been reported upon through the technique of time lapse filming.

"Nearly everyone is acquainted with the beauty of the plant kingdom revealed by the time lapse method," Dr. Bernard commented, "but in neither plant nor microscope work is immobilization of the subject a problem."

The radiologist achieved immobility of the parts under study in a dog subject by implanting pins in the bones of the forelegs. These pins act as guides for positioning the leg each time the animal is brought for X-raying. Applications of the new method will be most useful in medical teaching and research, the radiologist predicted.

Science News Letter, March 19, 1960

SURGERY

Surgery Saves Babies Having Heart Defects

THE LIVES of babies born with a serious defect of arteries arising from the heart may be saved and sustained by a new surgical procedure.

The new technique is reported from the University of California, Los Angeles, where Drs. Arthur J. Moss, James V. Maloney Jr. and Forrest H. Adams developed the procedure to temporarily correct the condition known as transposition of the major heart vessels.

A baby born with this condition has the pulmonary artery arising from the heart chamber where the aorta normally originates and vice versa. (The pulmonary artery is the vessel through which blood is pumped to the lungs. The aorta is the large vessel which supplies blood to the rest of the body.) In these babies blood does not contain sufficient oxygen so that they are intensely blue and usually die not long after birth.

Permanent surgical correction by switching these major vessels is mechanically possible but has not been successfully accomplished. It requires use of the heart-lung machine, a procedure which infants do not tolerate well.

In the new procedure, which requires no heart-lung machine, a hole is made between the two upper heart chambers. A branch of the displaced pulmonary artery is linked to a vein returning blood to the heart. This allows more oxygen to mix with the blood supplying the body tissues.

The procedure has been employed in six cases. Three babies died because of their poor condition at the time of surgery. In the three survivors improvement was dramatic. All signs of heart failure disappeared, appetites increased, the weight became normal. Two are no longer blue.

Science News Letter, March 19, 1960



COMET IN FLIGHT—The Comet Burnham, taken by Dr. Elizabeth Roemer with the 40 inch reflector at the U. S. Naval Observatory at Flagstaff, Ariz. The comet's tail was one-fourth of a degree long when this picture was taken.