



right angles to the ecliptic and directly across the sky from the sun. If it is a comet it may have already come nearest the earth, for its motion is slowing down, which may indicate the object is going away.

On the other hand, an asteroid might appear to move this way, if it had an orbit of high inclination to the earth's orbit.

In a letter to Harvard Observatory, clearing-house for astronomical news in the western hemisphere, Dr. V. M. Slipher, director of Lowell Observatory, writes:

"Herewith are two positions of the fast moving object, obtained by H. L. Giclas, of our staff. He photographed it both with the 13-inch search telescope and with our 9-inch Schmidt of 22-inch

focus. On both negatives the images are not stellar but are somewhat diffused and have the appearance of comet trails."

The positions are: March 18 at 1:27 a.m. EWT, 11 hours 12 minutes 45 seconds; plus 11 degrees 41 minutes; March 19 at 2:08 a.m. EWT, 11 hours 15 minutes 3 seconds; plus 13 degrees 24.5 minutes.

This indicates that in the week after its discovery, the object had moved 15 degrees or one twenty-fourth of the way around the sky. Its motion is just west of north, and on the evening of March 24-25, it passed about six degrees west of and slightly north of the star Delta Leonis. However, only large telescopes can see it, as it is of the thirteenth magnitude.

Science News Letter, April 4, 1942

ENGINEERING

Army Backs Total Blackouts Doubts Value of Dim-Outs

Air Is Clear Over America and Faint Lights or Puzzling Patterns Would Not Deceive, Is Belief

TOTAL blackouts of all illumination visible from the air, not pattern blackouts nor dim-outs, will continue to be the favored method of anti-air raid precautions, high officials of the Army Engineer Corps told Science Service.

These officials said demands for pattern blackouts by commercial electrical engineers have been thoroughly studied

by Army engineers and found unsuited to this country. They added that the clamor for pattern blackouts has served only to confuse civilians.

"In Great Britain," they explained, "the enemy is presented with a concentrated target more easily defended by anti-aircraft fire, barrage balloons and interceptor planes. Enemy planes must

fly at a high altitude and hence ground lights are less easily seen. Further, atmospheric conditions are usually poor.

"The United States is exactly opposite. Its vast coastlines make concentrated defense virtually impossible. The air is more clear than over England. Enemy planes, therefore, can come in at comparatively low altitudes and any pattern of ground lights can be picked up by the pilot and may be helpful as a reference point. A total blackout, on the other hand, is quite effective."

Army engineers doubt that pattern or camouflage lighting which seeks to mix up normal street lighting patterns would confuse an expert navigator. In the first place, they say, the navigator can reach a city by instruments, and need not rely on ground lights. Once over a city at comparatively low altitude he can pick up features of the terrain, rivers, hills, etc., to guide him to the target carefully located on his map.

"Suppose," they continued, "an enemy pilot is confronted by pattern lighting on the ground. He does not attempt to find his exact target by these lights, but discovers it by features of the terrain shown on his map or by flares. Once he spots his target he then uses the lights he sees as reference points to guide him while he circles or otherwise maneuvers to get over the target. Thus the lights which are supposed to confuse him actually aid him. Any fixed light can serve as a useful reference point to the target, hence the dim-out too is ineffective. Further it does little to eliminate dangerous traffic conditions.

"On the other hand," the Army engineers explained, "a total blackout, if really complete, greatly adds to a pilot's troubles.

"While he may find his target by noting the terrain carefully, the instant he begins to circle or maneuver in any way, he loses it again, if there are no lights to serve as reference points.

"Meanwhile the anti-aircraft and interceptor planes are given valuable time to get in their licks."

Science News Letter, April 4, 1942

The modern *circus* may have been invented by an eighteenth century British cavalryman named Philip Astley, who taught his mount tricks, later gave exhibitions which included performing humans.

Peru has the highest standard-gauge railroad in the world—at one point it reaches a height of 15,665 feet.