

NIGHTTIME ASTRONOMICAL SKY SURVEYS AND
UNIDENTIFIED FLYING OBJECTS

Carl Sagan

Harvard College Observatory
and
Smithsonian Astrophysical Observatory
Cambridge, Massachusetts

There are several instances of extended observations of large fields of view of the night sky by trained astronomical observers. These observations are usually performed in the context of meteor studies. One such is the Harvard Meteor Project, in which visual and photographic observations were performed (the latter with Super-Schmidt cameras, and a 60 degree field of view) in New Mexico during the period 1954-1958. Note that this is a locale and period characterized by extensive reports of unidentified flying objects. In all, a surface area of $7 \times 10^3 \text{ km}^2$ was observed to 80 km altitude for a total period of 2×10^5 minutes. Observations were good down to magnitude +4. No unexplained objects were detected.

A second example of such an observation program is the photographic and visual Prairie Network of the Smithsonian Astrophysical Observatory. The total area covered is about 10^6 km^2 , but only bright objects - brighter than magnitude -8 - can be photographed. The cameras cover essentially the entire sky, and the network encompasses parts of the states of Iowa, Kansas, Nebraska, South Dakota, Oklahoma, Illinois, Colorado, and Missouri. In 2500 hours observing to date, no unexplained flying objects have been detected. In fact, in the cases of both the Harvard Meteor Project and the Smithsonian Astrophysical Observatory Prairie Network, no bright moving objects other than meteors and occasional aircraft were detected. An even more extensive meteor survey, worldwide in scope, was performed during the I.G.Y. under the direction of Dr. Peter Millman of the National Research Council of Canada. Unfortunately, much of this data is still unreduced.

These sky surveys are much more extensive in area and time than such previous stellar astronomical surveys as the Palomar Sky Atlas, which also showed no unusual objects. Especially considering the experience of the observers in the foregoing observations, it seems likely that the frequent reports of unidentified flying objects observed at night by individuals relatively unfamiliar with the skies are due to misinterpretations of common astronomical objects.