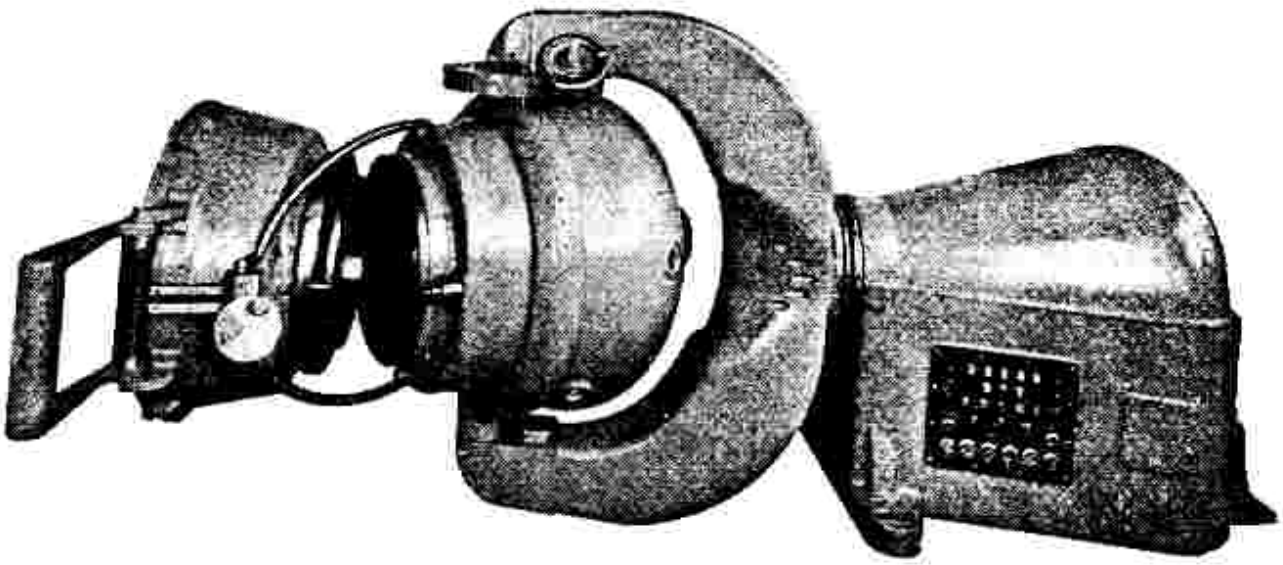
For Sale: Baker Super-Schmidt Meteor Camera

Baker Super-Schmidt Meteor Camera. Fast F 0.85 12.25 inch aperture 8 inch FL 55 deg field. Weight 6000 lbs Camera system on an equatorial fork mount, film molding machine and copy unit. Located in Southern Ontario. Serious enquiries only. E-mail Rick McWatters at rick.mcwatters@pathcom.com if you're interested.



Vital Statistics

- F ratio 0.85 (Yes, you read that correctly: zero point eight five)
- Clear Aperture 12.25 inches
- Primary Mirror 23 inches
- Sky coverage is 55 degrees across the 7.4 inch soup bowl shaped negative
- 8 x 10 inch sheet film must be molded to an 8 inch radius of curvature with a chordal diameter of 7.4 inches
- Camera and mount weigh around 6000 pounds
- Molding and film cutter press weigh about 1000 pounds
- Copy camera weighs about 200 pounds.

History

The Schmidt Camera Club, located in Toronto Ontario Canada, owns one of the six Baker Super Schmidt Meteor Cameras commissioned in the 1950's for upper atmospheric research.

Separated by 41.2178 kilometres (or 26 miles) , two Canadian cameras would photograph the sky to try and capture the same meteor trail on each camera. The trails were chopped with a rotating shutter so that the resulting tracks on each film could be analyzed to determine the altitude and speed of the meteroid as it became visible and burned up high in the atmosphere. This provided data for calculating the atmospheric density gradients over the range of heights where the meteors were seen.

Our camera was originally stationed at Meanook Alberta, some 60 miles north of Edmonton during the 1950's and 60's. Its twin at the Newbrook station made the first North American photograph of Sputnik 1 on October 9 1957 at 11:52 UT.

The camera was designed by Dr James G Baker in 1947. Optical system was built by the Perkin Elmer Corp of Norwalk Connecticut, and the fork mountings by the Hartford Special Machinery Co. Cold weather modifications were made in Canada to include heaters for the shutter motor and the main polar axis housing.

Film used originally in the Canadian observing program was Eastman Kodak blue sensitive X ray film on an acetate base. Sources of acetate based sheet film are hard to come by these days, so we have experimented with molding some colour emulsions.

The film molding machine and cutter press were designed by Harvard Observatory using advice from Eastman Kodak. After receiving the major components, the final system was adapted to the colder weather requirements by the staff of the Dominion Observatory. Our club has since taken the molding machine and cutter press and separated them into two units to make them easier to move and set up.

The copy camera, to make flat positives from the soup bowl negatives, was built in the shops of the Dominion Observatory using a Harvard design and a copy lens designed by Dr Baker and manufactured by the Perkin Elmer Corp.

This system makes a gnomonic projection onto 8 x 10 plates. The negative is held in place , as in the camera itself, using a vacuum system.

References

"The Meanook-Newbrook Meteor Observatories" by Peter Millman, National Research Council Ottawa. *Journal of the Royal Astronomical Society of Canada* Vol 53 pp. 15 - 33 (1959)
