

# Solar Eclipse Photography

## Introduction

Shown below is fellow eclipse photographer Mike Foulkes, complete with several members of his 'fan club' during the 1995 eclipse. Location: Fatehpur Sikri in India.



The main requirements for solar eclipse photography are clear weather, accessibility and (hopefully) a picturesque setting, this Indian location had all those producing some excellent photographs and video footage.

It isn't necessary to carry the telescope mounts and camera equipment shown here, it depends how serious you are. NASA's Fred Espinak took even more cameras! While I was content to just video this one.

## Equipment

Firstly you need to decide what camera equipment to take, it is worth taking a reliable and tested camera with a spare set of batteries, at every eclipse there are those cursing the fact their camera isn't working, it can be a long way to travel only to be beaten by a faulty camera. Needless to say batteries and film are often hard to find, well baked in the sun, out of date and expensive. If you plan to use a video camera a 'times two' converter is worth fitting to most zoom lenses and works better than the digital zoom facility on some cameras, again it needs checking before departure. One converter I bought wouldn't focus on infinity, not much use for solar eclipse work.

In addition to the normal camera items some mylar film (or equivalent solar filter) is essential if you intend to photograph the partial phases, it has been said many times before, normal photographic filters are very dangerous for solar work as they let through too much heat and can seriously damage both your eyesight and your camera. Suitable mylar film is available from the address at the end of the page.

My favourite camera for eclipse work (both solar and lunar) is the rather dated Canon A1, it has a 7 segment red led readout in the viewfinder showing both aperture and shutter speed, this can be read in total darkness if necessary.

My lens of choice is a Canon FD series 300mm f4 with a times two converter giving 600mm f8, which is about as big a lens as I want to carry half way around the world. If carrying such expensive equipment, it is essential to carry photocopies of receipts and adequate insurance.

For some countries it is well worth writing to the embassy or consulate before departure and obtaining written permission to 'take scientific equipment' into their country for the purposes of photographing the solar eclipse. I wrote to the Mexican Consulate in London prior to the Baja eclipse of 1991, while many of my fellow travellers had endless form filling at the Mexican Customs post I was greeted with a smile, handshake and shown through with my papers!



## Film types

One of my favourite films for many types of astronomy is Kodak Ektachrome 400, it may be considered too fast for decent solar eclipse work, however, with many a lens operating at f8 (either a 500mm f8 lens or 300mm f4 and times two converter), the shutter range can be from 1/1000 to 1/2 seconds for the various features during totality. One roll of 36 exposure film is all you need for the actual eclipse as changing film part way through is bound to cause problems.

## Video work

For my last eclipse trip to India, I decided that I needed to travel light as I was going via Thailand (it was a cheap travel offer), camping out in the jungle on the way. Taking heavy SLR cameras and lenses was out, so I decided to make a documentary film with a Hi8 stereo camcorder. This camera was a Canon UC5Hi, already well superseded by later models, but at least I had a fully functional camera that was relatively inexpensive. I also used a two times converter on it's 'x12' zoom lens and a medium weight camera tripod. In order to conduct reasonably professional interviews I took a directional 'rifle' microphone, a tie clip microphone, a 'two mono' to single stereo adapter for the microphones and a pair of walkman earphones. The image of the total eclipse shown above is a frame taken from my original Hi8 video using a PC frame grabber.

For the actual eclipse I made a cardboard disk sandwich with mylar film in between, this was easily taped to the lens for the partial phases and quickly removed for interviews with fellow observers -while waiting for totality. Mylar film attenuates the sun's light (and heat) to such an extent that normal auto modes work fine on the video camera, again it is worth trying before travelling. For the total eclipse phase the filter was just pulled off and the camera left on auto. During the partial phases at the end of the eclipse I interviewed a few fellow travellers, their enthusiastic reactions made the video come alive.

**Viewing the sun can be dangerous** take care with filters and never view the sun directly. If you are unsure about the effectiveness of a filter seek expert guidance.

Mylar film can be obtained from Beacon Hill Telescopes in the UK their address is: 112 Mill Road, Cleethorpes, DN35 8JD England. Tel 01472 692959.

Baader AstroSolar™ can be obtained from [David Hinds Ltd](#)

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