



Anatomy of a Plate

The purpose of the aluminum plate is to precisely position fiber optic cables so that light from up to 1,000 objects can be directed to the spectrographs at one time. Each plate covers a three-degree patch of the sky.

The tab, which is inscribed with the plate number, designates the South axis of the field and can be lined up with the plate poster

Fiber optic cables are grouped into bundles (harnesses) that are plugged by hand into the plate. Each fiber within a bundle can be plugged at random within the boundary outlined in black.

Holes along the edge allow the plate to be clamped securely to the cartridge that is then attached to the back of the telescope

Each plate has a number printed on the back and next to the tab. This number is associated with all the data captured by this particular plate.

Many of the 3.3 mm holes are marked with different colors indicating different types of objects or objects that are particularly bright. The technicians plugging the plate take care to assign fibers to these holes in such a way as to keep them separated on the spectrograph.

The numbered double holes mark the position of guide stars. The small hole orients a special bundle of tiny optical fibers. Software corrects for any motion across the bundle.

This picture shows the spectra as they appear on the spectrographic camera. Fibers from the plate are directed to precise locations on the CCD to take advantage of all the space available. The bright dots on the image are spectral features called emission lines.

