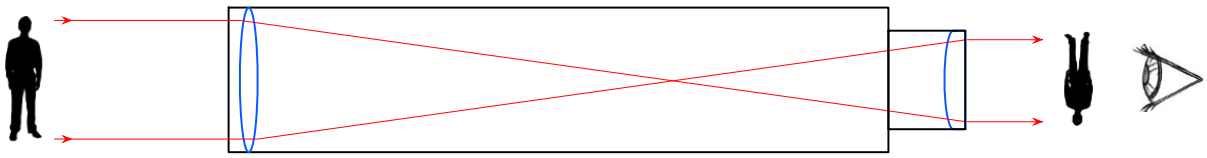
Imaging with *SPIRIT*

Which way is up?

Views through telescopes are often inverted. In some telescopes, the orientation of images can change depending on which part of the sky is being viewed.



The cameras on *SPIRIT* have been positioned 'square' to the axes of each telescope mount. This means that the field of view is aligned using a 'north-south' orientation.

However, this orientation changes when moving from the eastern sky to the western sky due to the design of the *SPIRIT* telescope mounts—a design known as the *German Equatorial* mount[1]'.

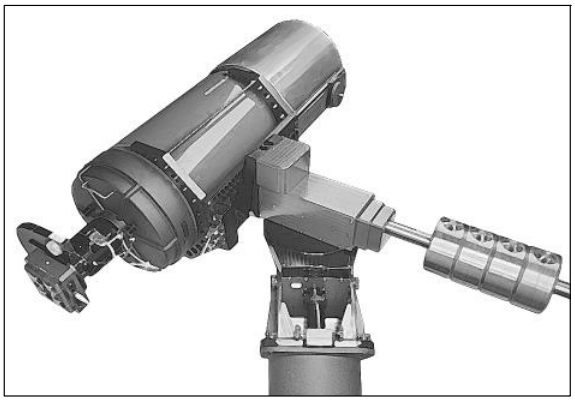
All telescope mounts of German Equatorial design need to 'flip' in order to move from the eastern side to the western side of the meridian and vice versa. When this happens, the field of view rotates 180°.

M 42 imaged in the eastern sky

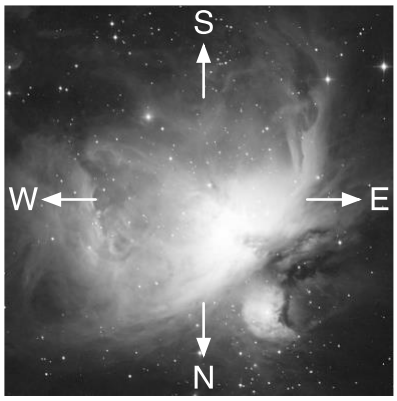
M 42 imaged in the western sky

[1] See http://en.wikipedia.org/wiki/Equatorial_mount for further information.

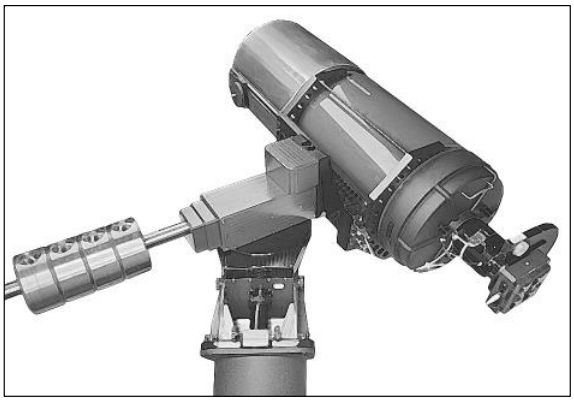
An astronomical object's orientation with respect to the night sky never changes, despite the fact that *SPIRIT's* field of view rotates 180° when it crosses the meridian. For any given astronomical object, north is <u>always</u> in the same direction.



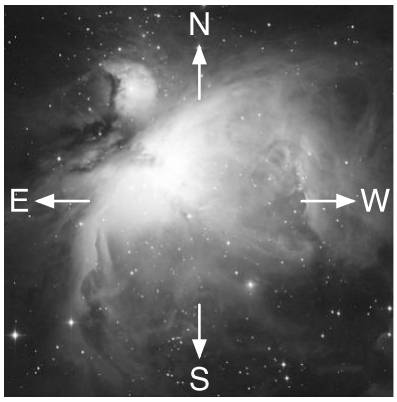
SPIRIT I imaging in the eastern sky



Field of view orientation



SPIRIT I imaging in the western sky



Field of view orientation

The position of the cardinal points (NSEW) on the night sky can appear counter-intuitive compared to their arrangement on a terrestrial map. It helps to remember that we are looking 'up' at the night sky, not 'down' on a map.

An easy way to interpret the images above is to imagine standing in a field looking up towards the northern sky. East will be on your right, and west will be on your left.

When facing south looking up at the night sky, east will be on your left, and west will be on your right.