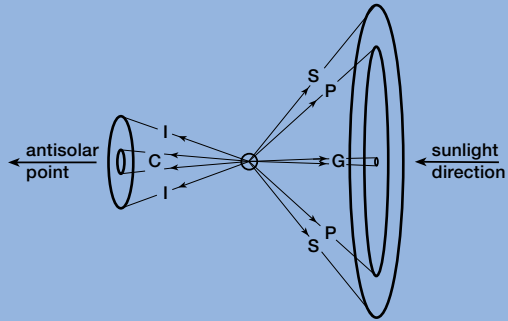


LOCATING AND OBSERVING WATER-DROPLET RINGS



WATER-DROPLET OPTICS MAP The diagram maps out where the various displays form relative to the positions of the Sun (or Moon) and the water droplet. To see them, however, you must vary your position with respect to the Sun and the droplet.



FACING AWAY FROM THE SUN To see rainbows (P-primary; S-secondary), glories, and *heiligenschein*, (depicted collectively as G) you must be between the Sun and the droplets, with your back to the Sun.

RAINBOW To more precisely locate your rainbow, stand with your back to the Sun and find the head of your shadow—this is the antisolar point and the center point of the rainbow's cone. Stretch out your arm and point your index finger at your head's shadow. Hold out your thumb at an approximately 42° angle (half a right angle) and pivot your wrist while keeping your index finger aimed at your head. Your thumb traces out the direction of the arc; take note of where the rainbow meets the horizon.

The rainbow never gets any higher in the sky than when the Sun is at its lowest. At sunrise or sunset, when the Sun is on the horizon, the rainbow is a full-half circle high. As the Sun rises, the bow, which is always centered on the antisolar point, sinks. When the Sun reaches 40° elevation, just the top of the rainbow can be seen resting on the ground. The best times to observe rainbows are usually in the early morning or in the late afternoon when the Sun is relatively low.

GLORY AND HEILIGENSCHIEIN These surround the antisolar point, where the head of your shadow falls, and are more often noticed when the Sun is higher in the sky.

FACING THE SUN To see coronas and aureoles (shown collectively as C) and iridescence (I), you must face the Sun (or Moon), with the droplets between you and the Sun (or Moon).

CORONAS AND AUREOLES These are generally 5° to 15° in width and surround the Sun or Moon. Stretch out your arm and cover the Sun with your fist to block its brightness. The width of your fist is about 10° and marks the general boundaries of the rings.

IRIDESCENCE Iridescence on clouds may be found up to 45° away from the Sun in any direction.

Opposite: LOW BOW A spectral footbridge spans the valley near Loch Awe, Scotland, on April 18, 2006. With the Sun at 40° high, just the top of the primary bow skims the landscape, while the secondary bow the ridges. Because the rainbow is centered on the antisolar point, a high Sun splashes a low dome on the ground and the Sun at the horizon inscribes a full half circle in the sky.