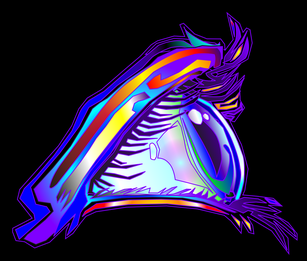
APPARENT POSITION OF A RAINBOW

Parallel incident rays of white light



All these raindrops
are reflecting light
towards the observer

This is the apparent
position of this rainbow

A rainbow may appear to be close by or in the middle distance.
But the raindrops reflecting light can be anywhere within a cone centred on the observer.