

Optical luminosity of the transient luminous phenomena in Hessdalen, Norway

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Transient luminous phenomena has been observed in the low atmosphere over Hessdalen valley for several decades, first report is claimed to be 200 years old. The area is scattered with old copper, zinc, sulphur and iron mines. The river Hesja divides the valley, running south to north. The river descends from 800 m altitude to 600m. In the middle of the valley, an old copper and sulphur mine feeds the river with its acidic sulphur pollution. Eyewitnesses have reported lights emerging from the river, but most reports are of lights suddenly emerging in low altitudes over the valley, 1000m – 2000m altitude. Common colours are white, yellow, orange and blue. Green is absent. The optical spectrum of the white lights has been obtained several times, indicating a continuous spectrum. The luminosity of the Hessdalen lights has been debated, some speculating that the phenomenon's radiant power reaches up to 1MW. A more moderate calculation done by Teodorani in 2004 suggests 19KW. The cause of the huge difference is due to uncertainty in establishing correct distance to the phenomenon. Recent discoveries done by this team, indicates that the radiant power is usually much lower. For the first time in Hessdalen, pictures with optical spectrums was obtained at a distance not more than 500m. Two similar observations were done from the same position, indicating a possible birthplace. Atmospheric data and spectrum analysis was also coinciding. Data from this short distance observation will be presented.