

# **Behavior of the atomic oxygen 557.7 nm atmospheric emission in the current solar cycle 23**

**A.V.Mikhalev** (1), P.Stoeva (2), I.V.Medvedeva (1), B. Benev (2)

(1) Institute of Solar-Terrestrial Physics, Russian Academy of Sciences, Siberian, Branch, Irkutsk, Russia, (2) - Solar-Terrestrial Influences Laboratory, "Acad. D. Mishev" - Bulgarian Academy of Sciences, Stara Zagora Department, Stara Zagora, Bulgaria,  
(mikhalev@iszf.irk.ru / Fax: +7 - 3952 - 425557)

We present the results of nightglow observation of the atomic oxygen 557.7 nm line emission in the current solar cycle. We use the experimental data obtained at geophysical observatories near Irkutsk (52 N, 103 E) for the 1997-2005 period and in Stara Zagora (42 N, 25 E) for the 2001-2002 period. The 557.7 nm emission observational data are compared with atmospheric, solar and geophysical parameters. We note a difference in correlation coefficients between the 557.7 nm emission intensity and the solar activity indices in different phases of the solar cycle. Airglow observation results are compared with the observational data from other authors.

The obtained results are preliminary interpreted by high sensitivity of atmospheric parameters determining the 557.7 nm emission intensity to atmospheric dynamics and various disturbances including the effects from lower atmospheric layers.

Probably, the display character of these disturbances and their contribution to the 557.7 nm emission variations may differ in particular years or cycles of solar activity.