CHAPTER- 6

SUMMARY AND CONCLUSIONS

The 630 nm is emitted from a layer of semi-thickness 50 km at a altitude of 250-300 km.

The OI 630nm emission provides a convenient tool for remote sensing of the upper atmosphere. The 630 nm emission at the ground provides the integrated volume emission observed at the base of F-layer. Its intensity is proportional to the electron density parameter of F-region.

The dissertation brings forth some of the interesting data sets on night airglow (630 nm) obtained from a low latitude station, located at Kolhapur. The station assumes importance because it is closer to the equatorial ionization anomaly region. The instruments in use are the state of art, all-sky imaging system, photometers, Fabry-Perot Interferometer, VHF scintillation receiver and Partial Reflection Radar.

In the present studies and from the interaction with research groups in this field, we have arrived at following important conclusions.

(1) The appearance of peak in night airglow (630 nm) data shifts as a function of season of the year.

(2) The signature of midnight temperature maximum (MTM) between 02:00 to 03:00 hrs LT has been reported in this work and no such studies have been made from other low latitude regions except a

report from Peru.

(3) Our calculations of drift velocities (meridonial and zonal) using photometric data indicated that it varies from 59 -137 m/s in present studies.

(4) The signature of gravity waves has been obtained from 630 nm photometer data.

In future, where the work will be extended, we would like to analyse the characteristics of atmospheric gravity waves using photometer and imaging data.