ISSN Print: 2394-7500
ISSN Online: 2394-5869
Impact Factor: 5.2
IJAR 2020; 6(9): 413-414
www.allresearchjournal.com
Received: 12-06-2020
Accepted: 10-08-2020

Dr. Mrityunjay Kumar Thakur
Nandani, Sivaisinghpur,
Samastipur, Bihar, India

Corresponding Author:
Dr. Mrityunjay Kumar Thakur
Nandani, Sivaisinghpur,
Samastipur, Bihar, India

Ionosphere of venus based on venus express-2006

Dr. Mrityunjay Kumar Thakur

Abstract
The Venus express space croft (VEX) has obtained Venus since April 2006. The vex radio science experiment (Vera) used the radio subsystem of the space craft to study the ionosphere and surface of Venus. Venus express provide a valuable data for a systematic studies of ionosphere of Venus. The present paper focuses on the development a new theoretical model of the ionosphere of Venus.

Keywords: Venus express, ionosphere, vera, etc.

Introduction
The atmospheric profiles cover a wide range of altitudes and local time, enabling us to study the dependence of vertical small scale temperature change on local time and latitude.
Venus dayside ionosphere was developed to examine the implication of express result. We obtain profiles for CO_2, CO, O and natural temperature at two different solar zenith angle 17^o and 60^o Venus slow rotation and cons quently long day ($2x10^7$ sec) means that averaging over solar zenith angle is inappropriate and that separate calculation should be done for each angle of interest.

Discussion
The model developed, do not differ substantially below 120 km for both zenith angle we examined. Above this height the principal difference are in exospheric temperature for ions, neutrals and electrons, Fig (1) and Fig (2) show the temperature profile for zenith angle 17^o and 60^o respectively.
To obtain ion and electron temperature we made certain approximation to obtain these temperature profiles. First it is found that an average ion temperature will exceed look. Second the possible exospheric temperature in our calculation may range up to several thousand degrees. Third in the region below the ion density peak there is less ultraviolet heating and rapid thermalization through collision with the neutral gas so that the ion and electron temperature are the same as the neutral ones. Fourth below and above the peak region, the electron and ions are heated up. But the electron temperature is still limited by electron ion collision and does not increase as dramatically as it does in exospheric temperature. Electron collision frequencies are low and the electron temperature increases dramatically reaching its.
Exospheric value in the region from 350-400 km altitude. All of these features are qualitative and exact calculation of these, is needed.

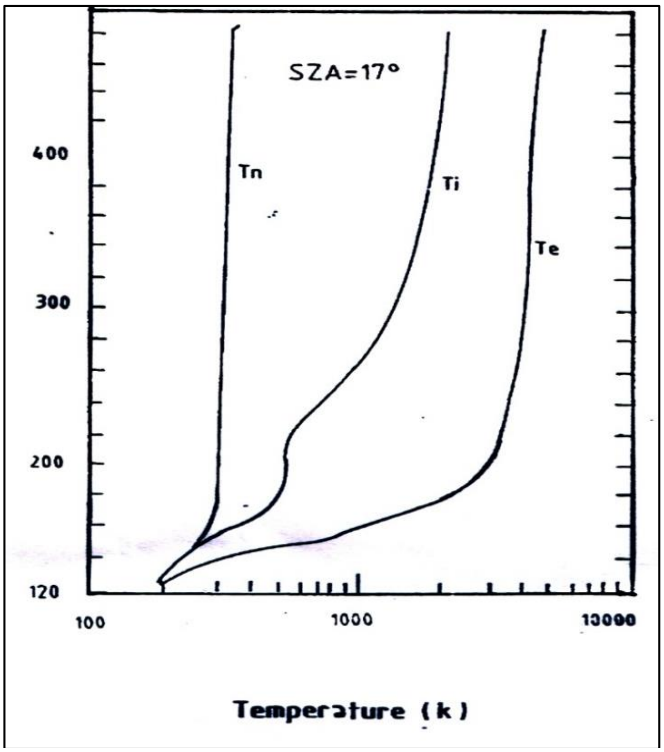

Fig 1: Electron, Ions & neutral Temperature Profile used for Calculation

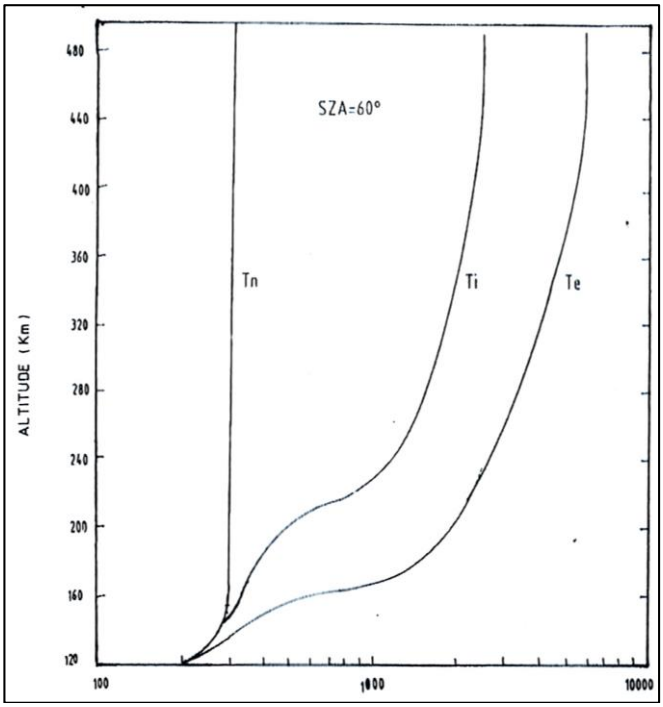

Fig 2: Electron, Ions & neutral Temperature Profile used for regular model Calculation

Conclusion

The 60° regular model: This section is deviled to develop a 60° regular model to compare the calculation value with result obtained from Venus express. Later we examine the effect of solar zenith angel on the model result and develop a 17° model also but later are not discussed in details. We consider the mixing ratio of He as $Ix10^4$ for 60° SZA model. A number of graphs have been plotted for this model only. A definite improvement in this model is that our peak in electron density falls at the same altitude as that observed by Venus express mission.

Reference

1. Barabash *et al*. The loss of ions from Venus through the plasma wake Nature 450-650-653, 2007.
2. Svedhem *et al*. The Venus express Mission J Geophys. res 2009; 114:E00B33 dio 101029/2008 JE003290/2009
3. Jean loup Bertaus. The unexpected temperature profile of Venus at mosphare. Nature, 2007
4. Hoofs *et al*. Venus express- Science observations Experience IAC Conference, Hyderabad, 2007
5. Law C *et al*. "observation of magnetic structure at the dayside ionosphere of Venus J-Geophys res. 1995; 100:23973-23981.