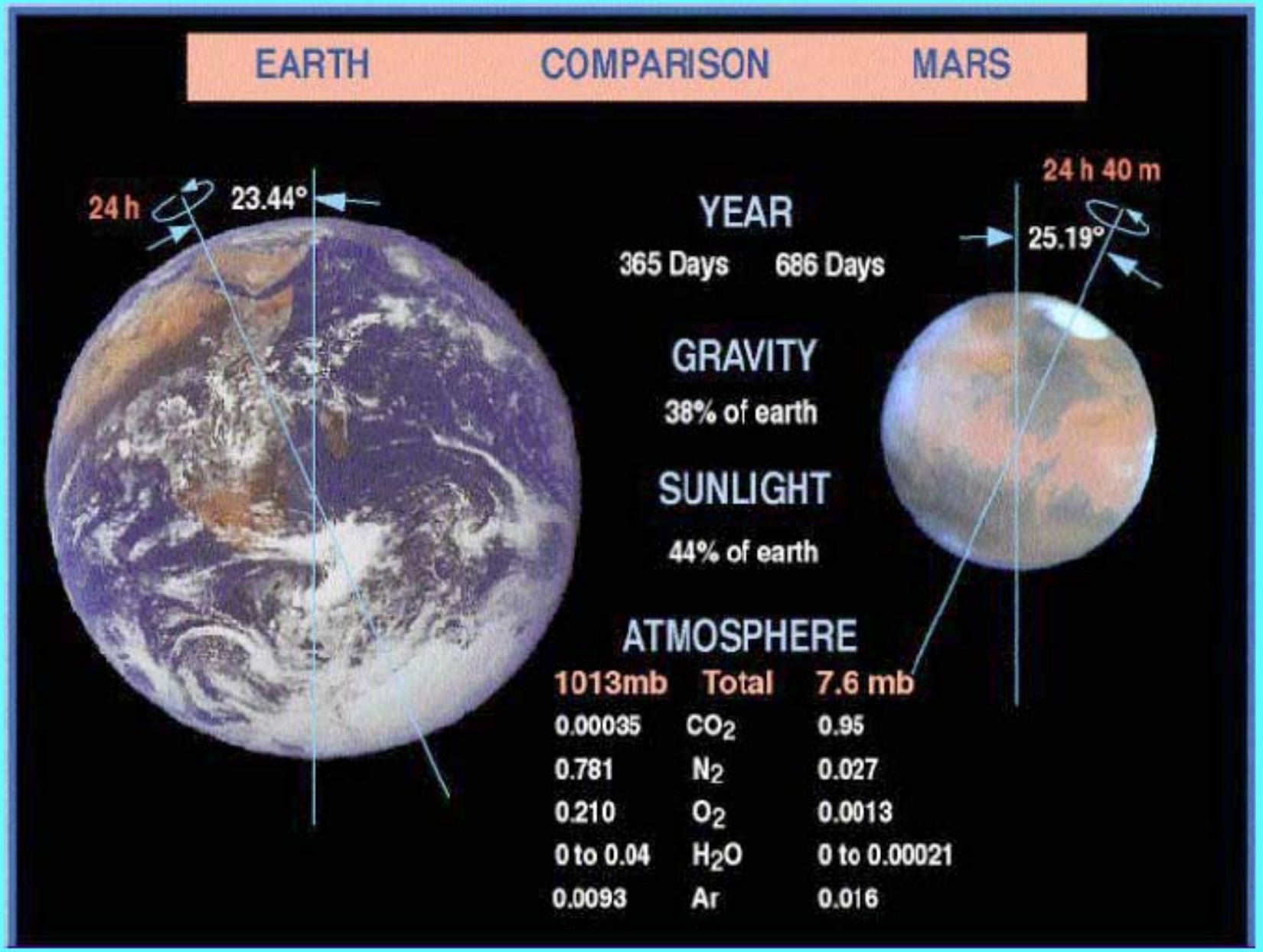
# Meteoroid Ablation in the Martian Atmosphere : Observations and Modeling

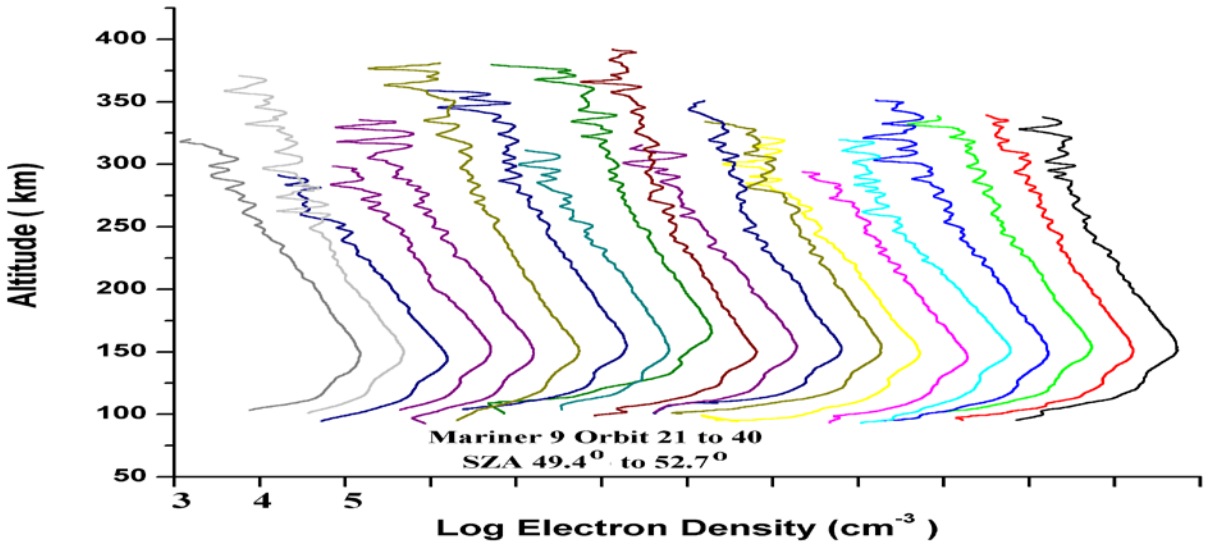
**S. A. HAIDER**

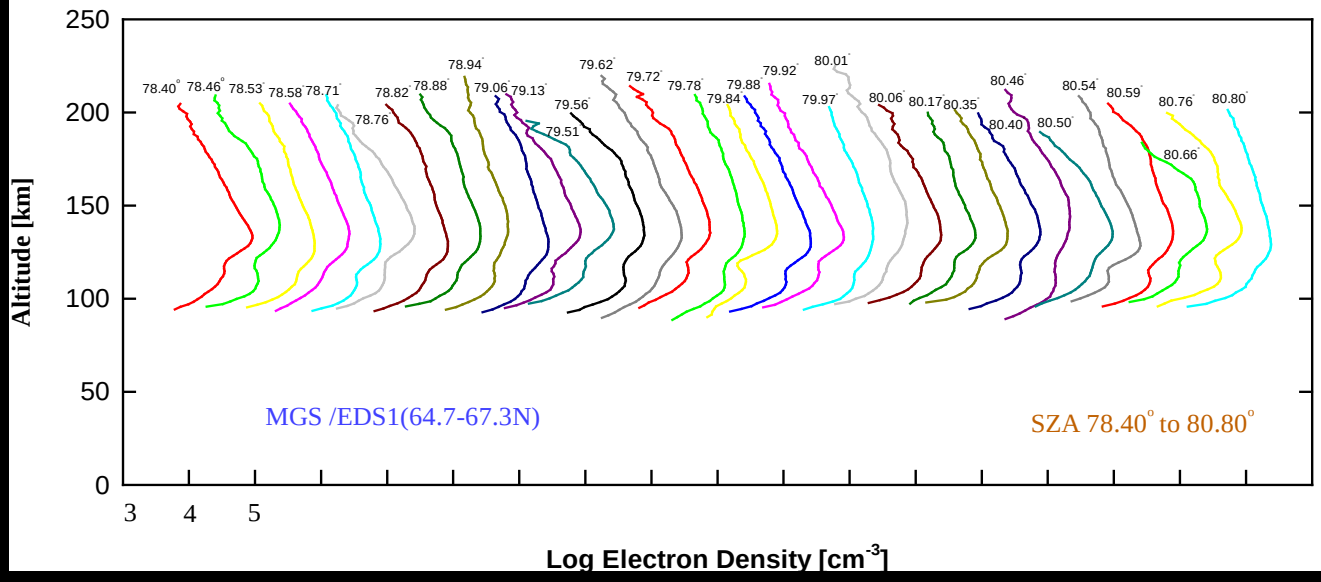
**FNA, FASc, FNASc**

*Department of Space and Atmospheric Sciences, Physical Research Laboratory, Ahmedabad, India (email: haider@prl.res.in)*

Academy Lecture
8/11/2013

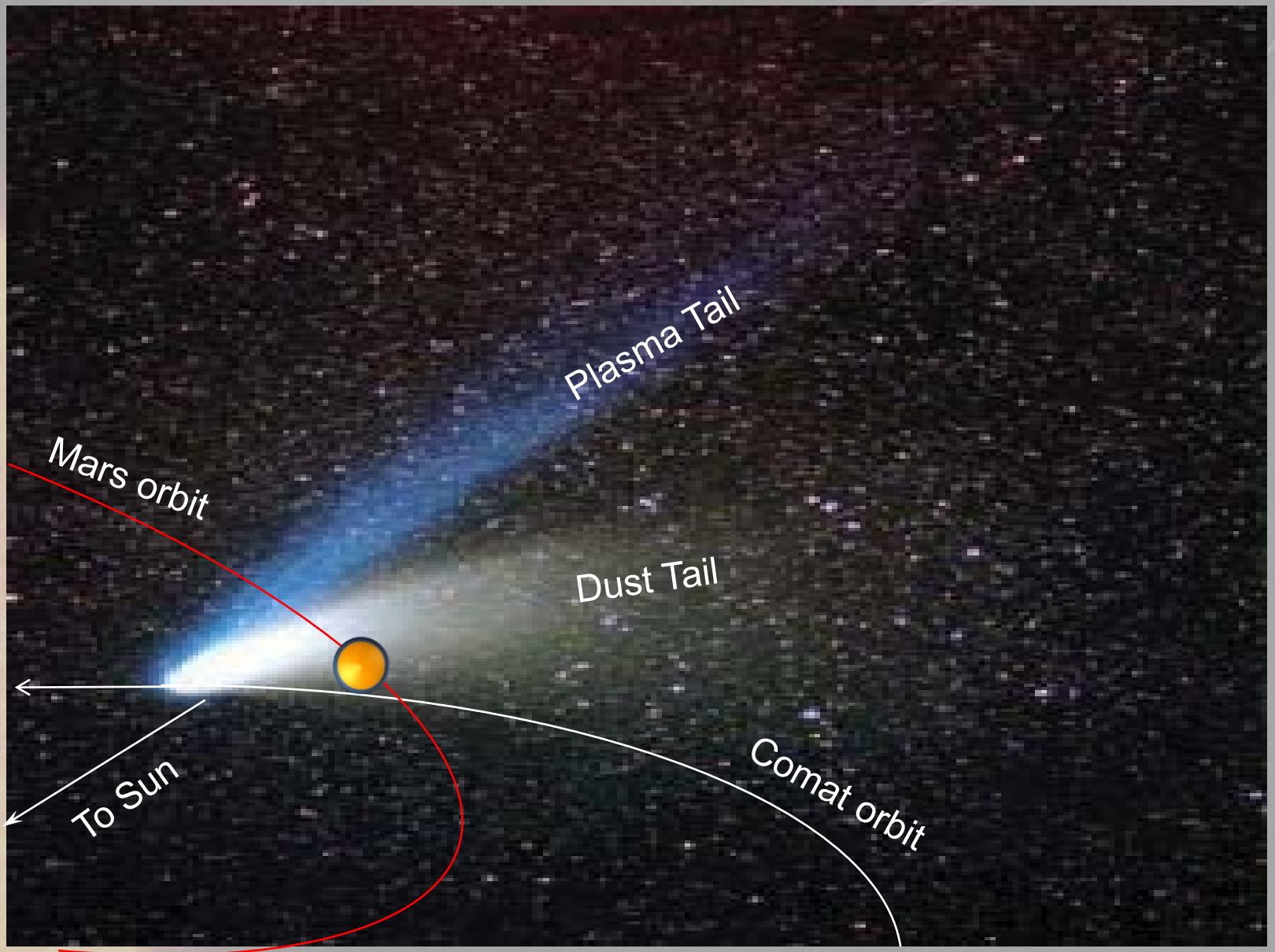

EARTH
COMPARISON
MARS
24 h
23.44°
24 h 40 m
25.19°
YEAR
365 Days
686 Days
GRAVITY
38% of earth
SUNLIGHT
44% of earth
ATMOSPHERE
1013mb Total 7.6 mb
0.00035 $CO_2$ 0.95
0.781 $N_2$ 0.027
0.210 $O_2$ 0.0013
0 to 0.04 $H_2O$ 0 to 0.00021
0.0093 Ar 0.016

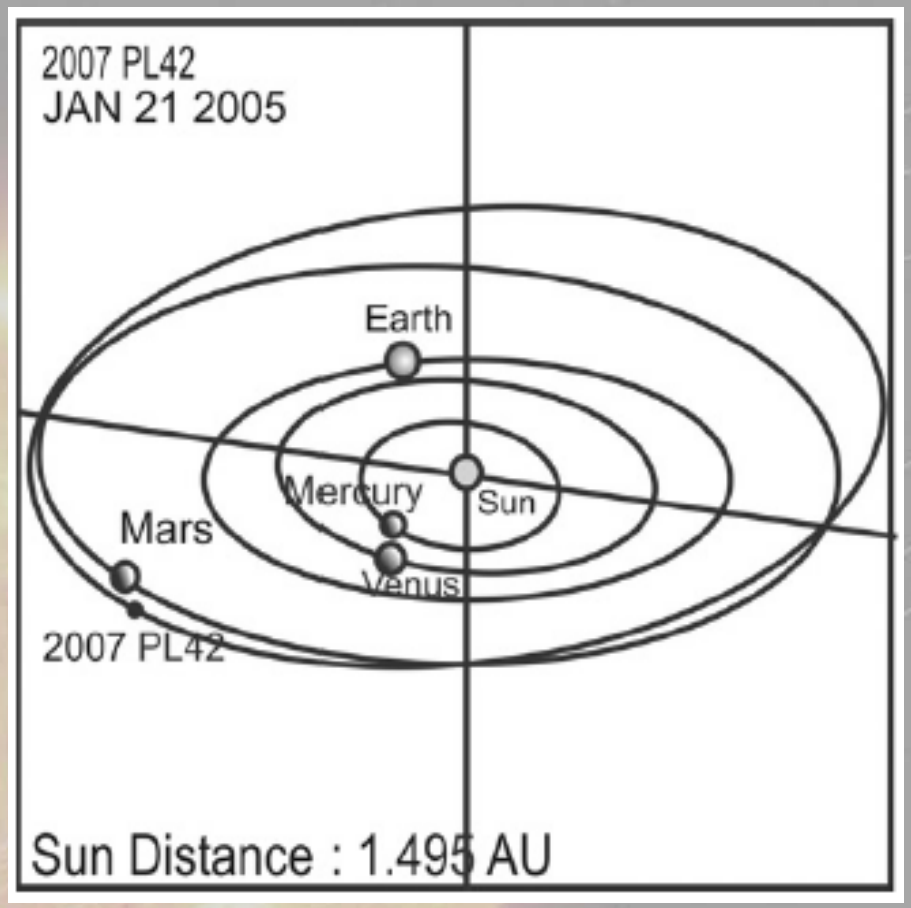


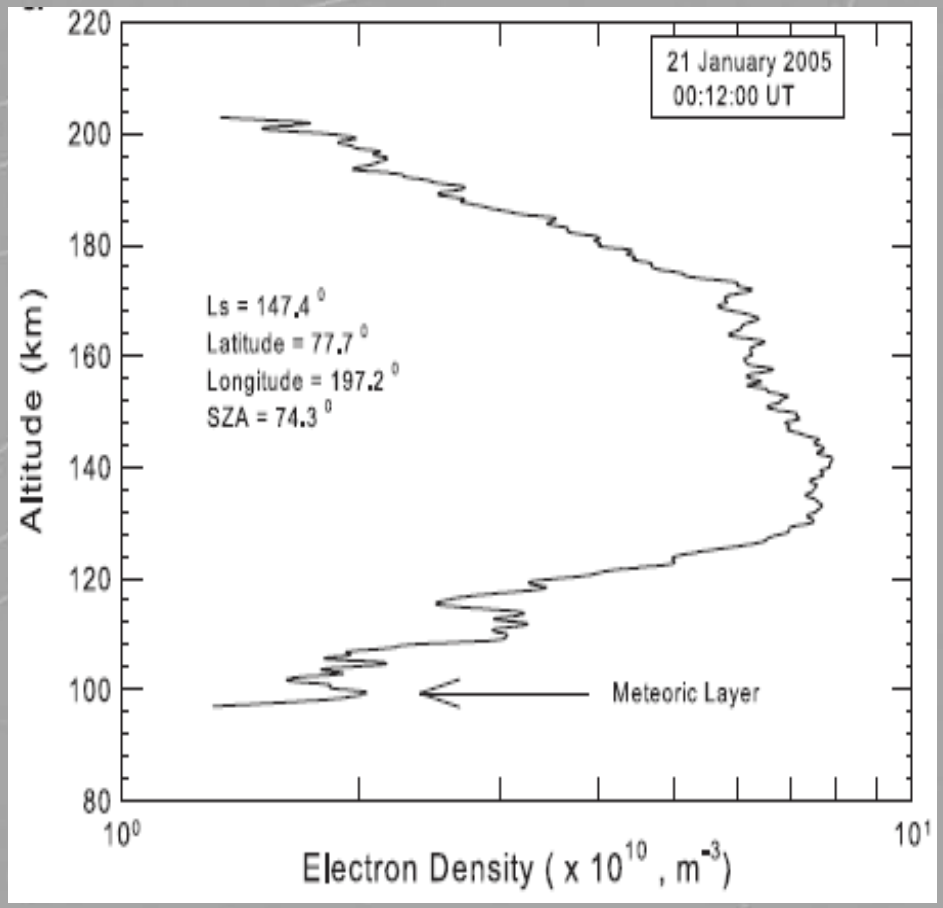




**Haider et al.**
**Icarus (2006)**

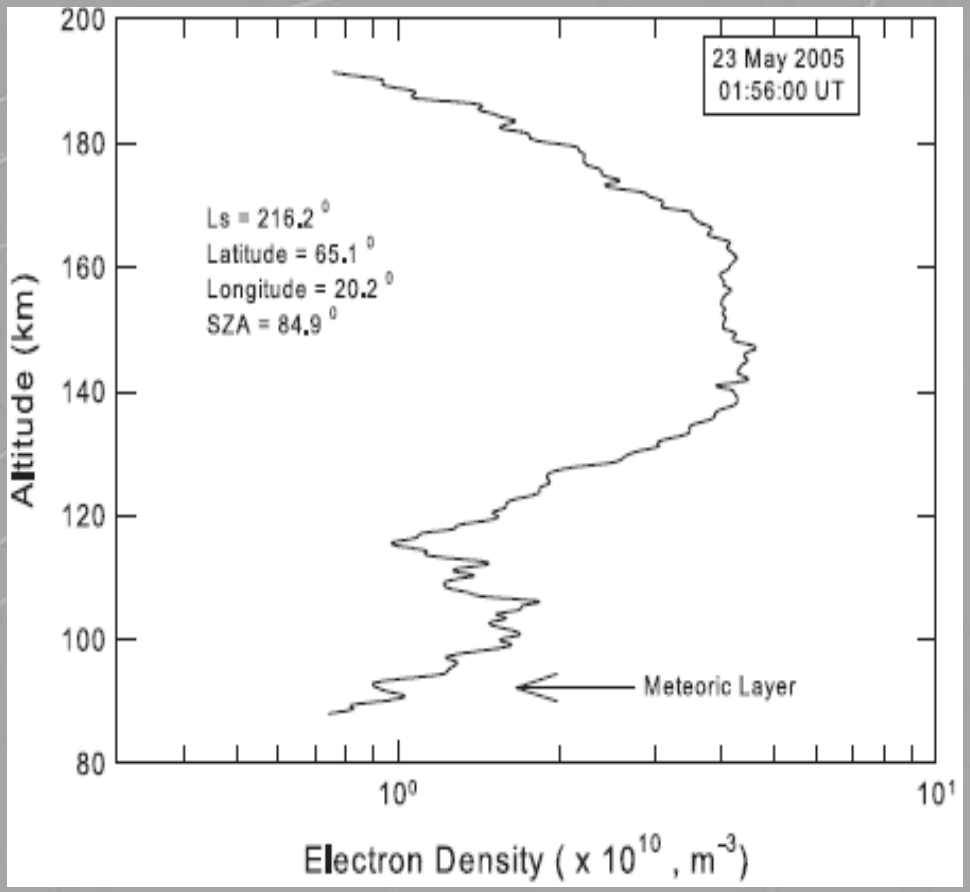
# Comet Intersection






Pandya, B. M., and S. A. Haider (2012), Meteor impact perturbation in the lower ionosphere of Mars: MGS observations, Planet. Space Sci., 63, 105-109, doi: 10.1016/j.pss.2011.09.013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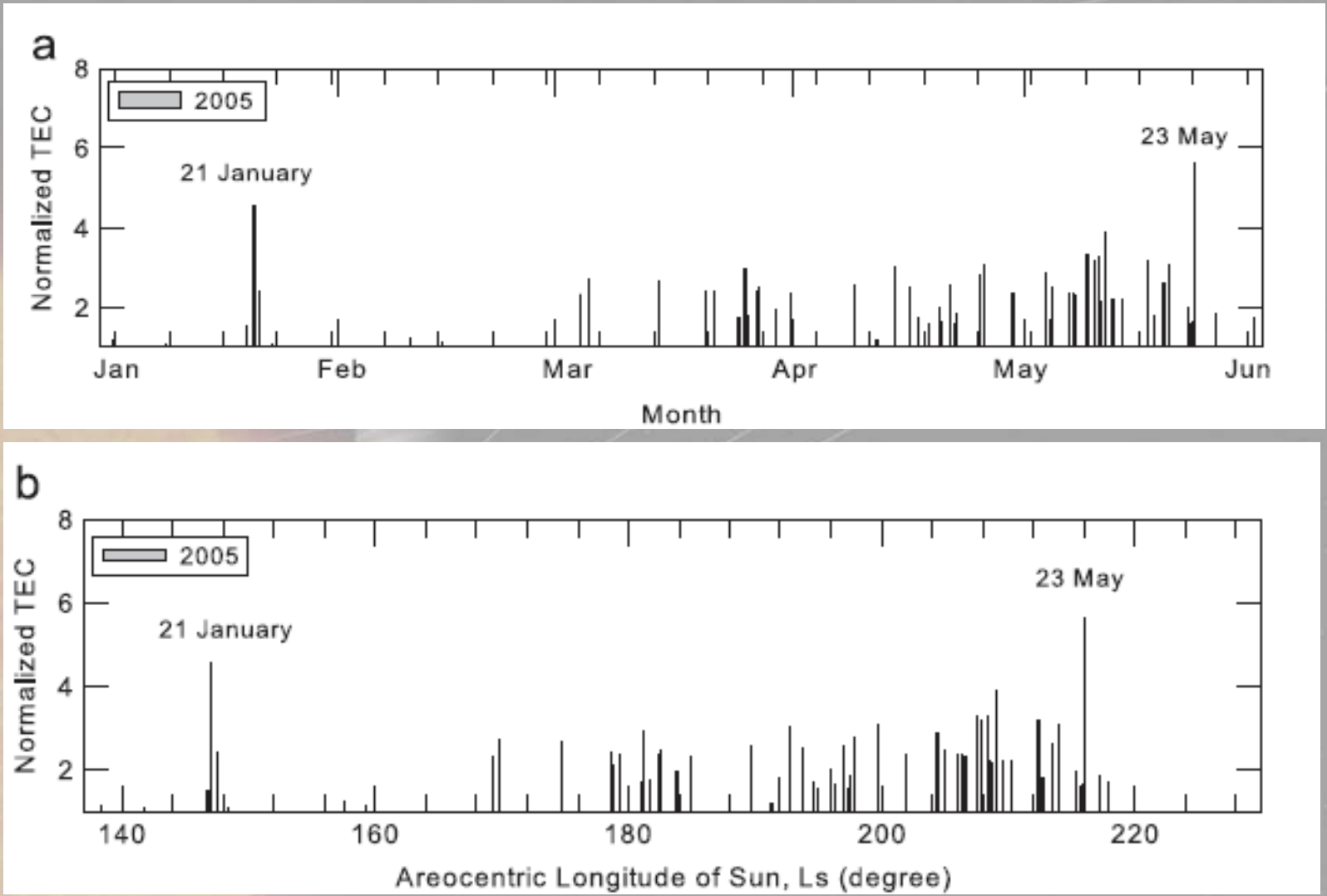


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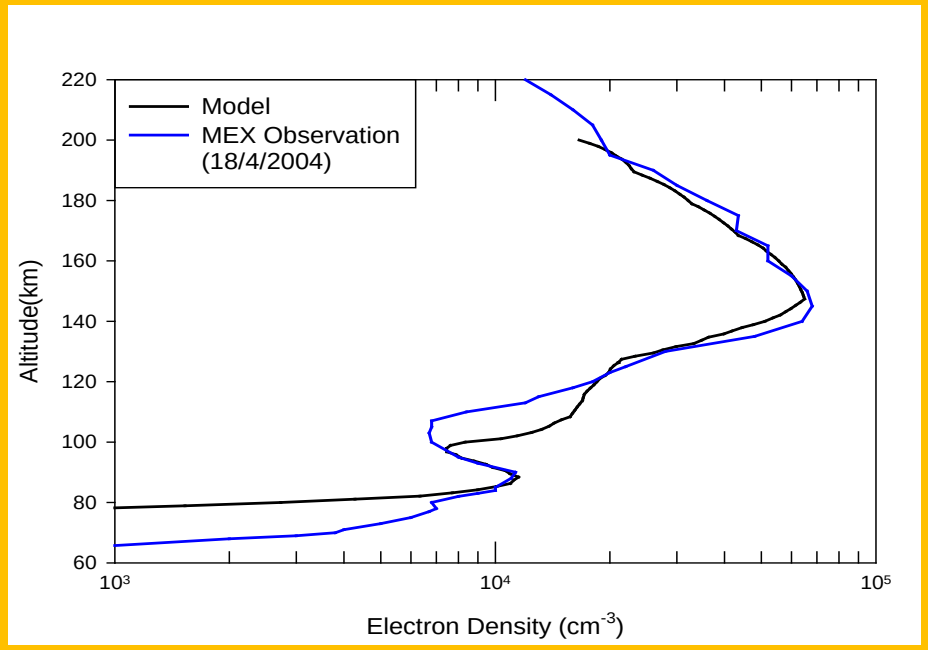
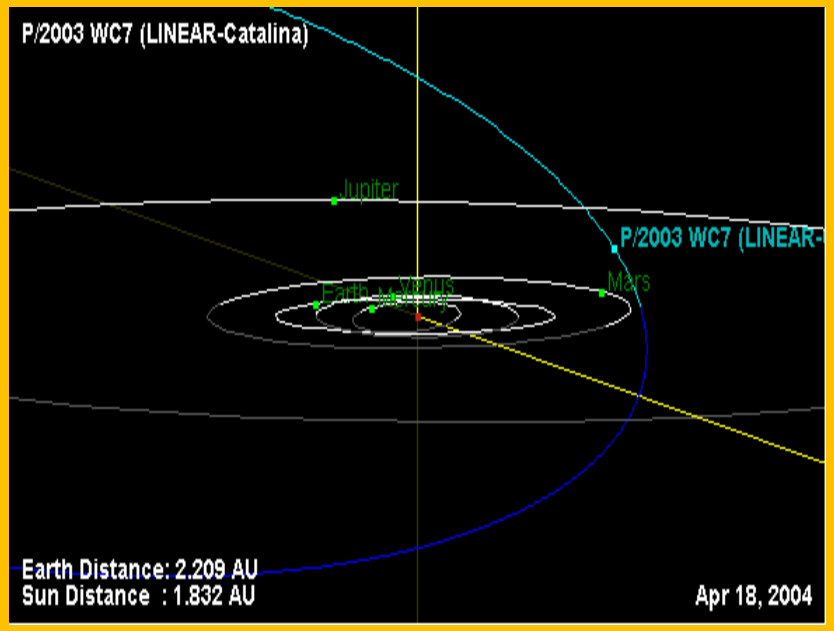
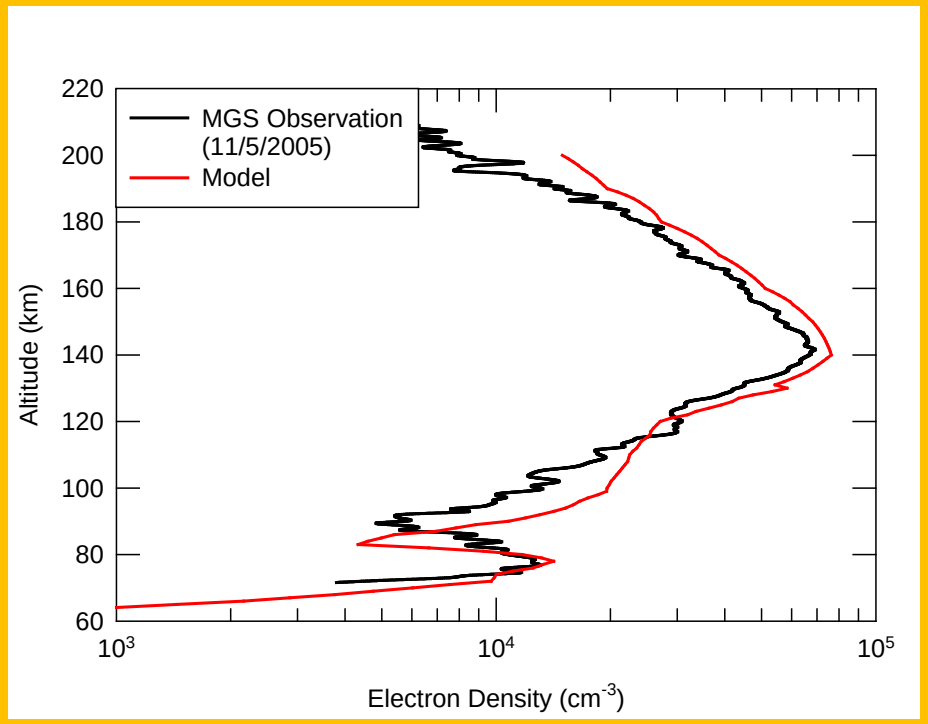
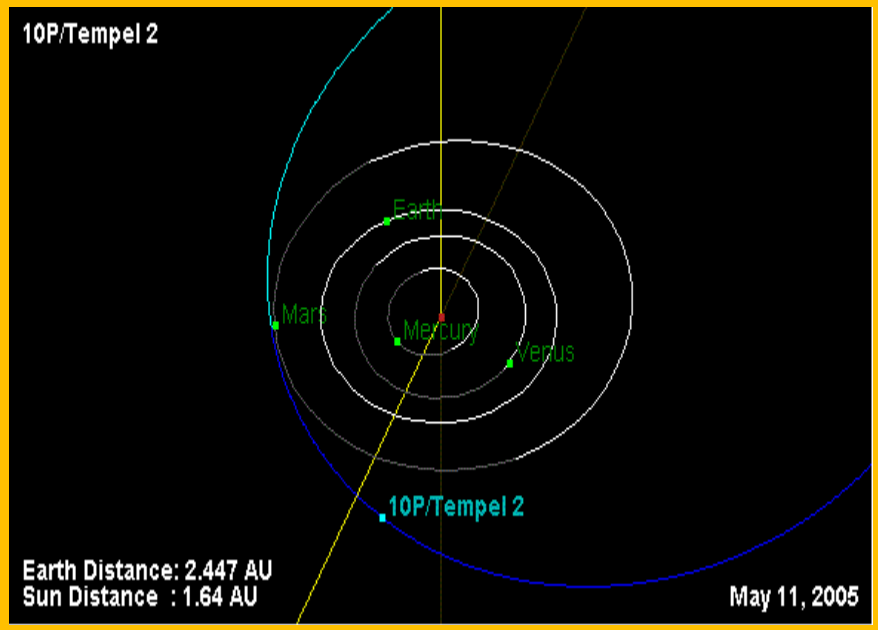
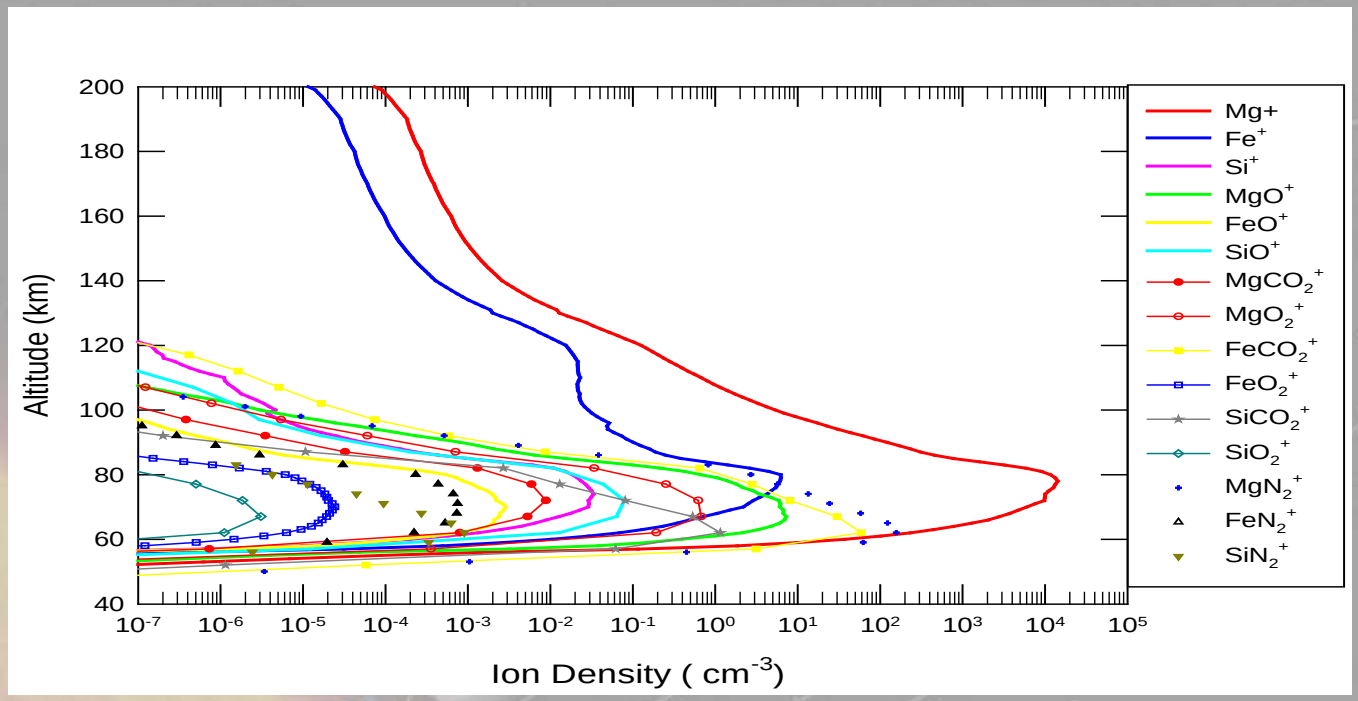


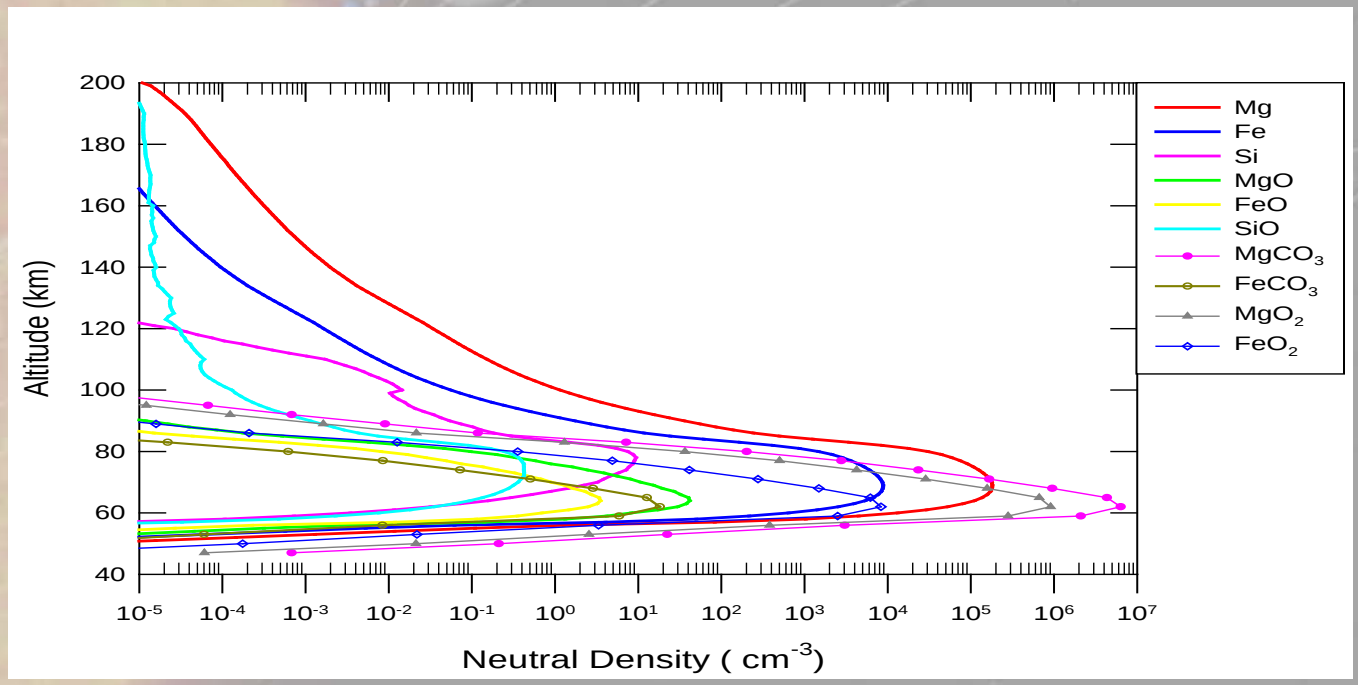




Submitted/JGR (2013)




Submitted
JGR (2013)

# Future Missions to Mars:

## MAVEN-Orbiter (NASA)

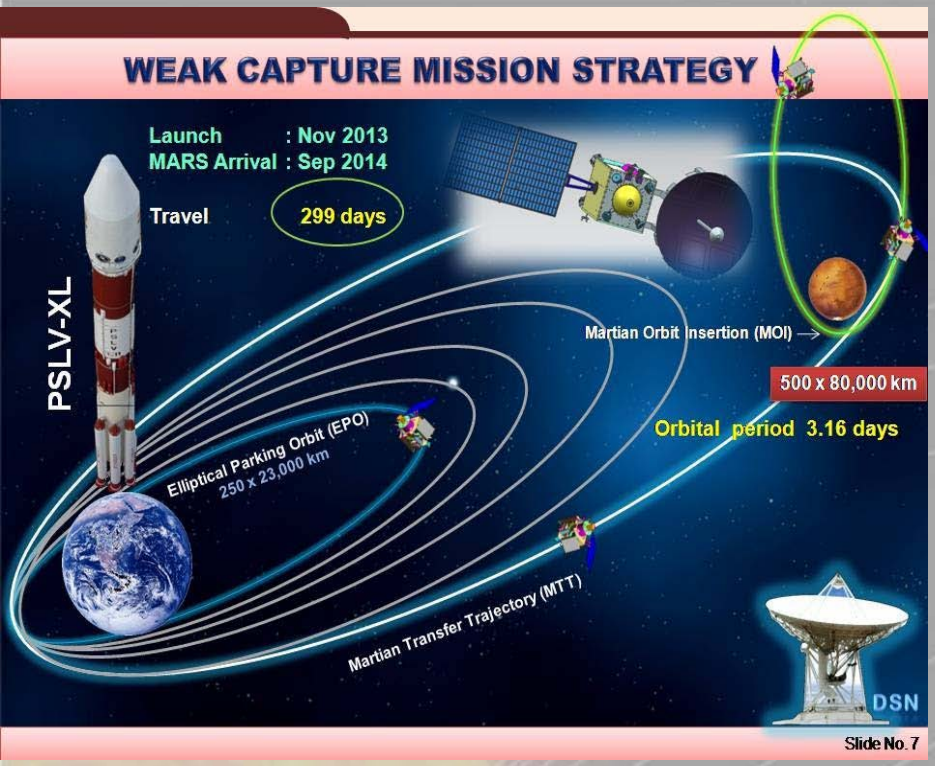
Determine Current State of the Atmosphere/Ionosphere/Solar Wind Interaction, Escape of Neutrals & Ions from Mars

## Indian Mars Mission-Mangalyaan

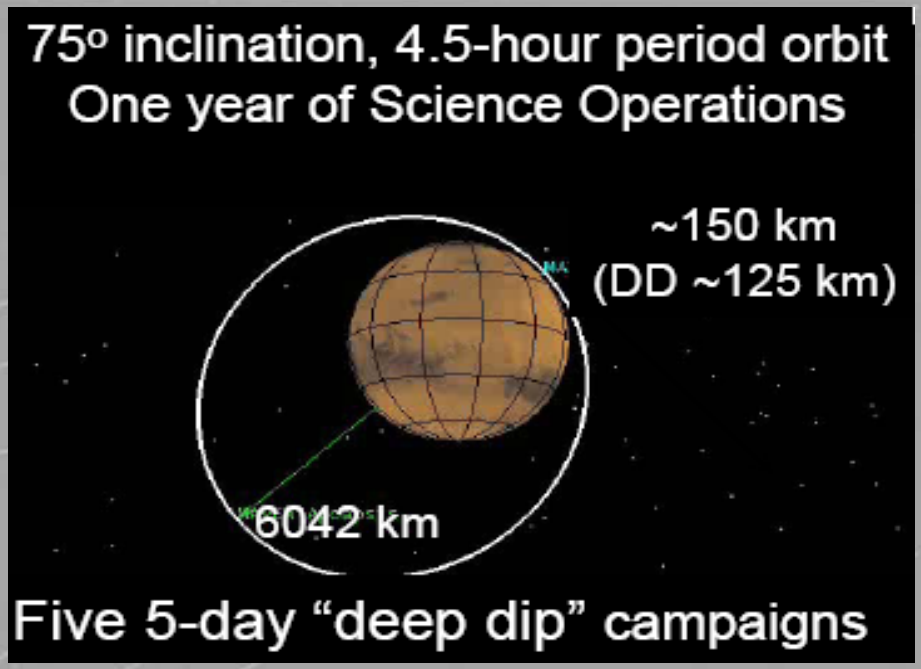
Atmosphere/Ionosphere, Escape of Neutrals & Ions from Mars

## MELOS-Orbiter & Lander (Japan)

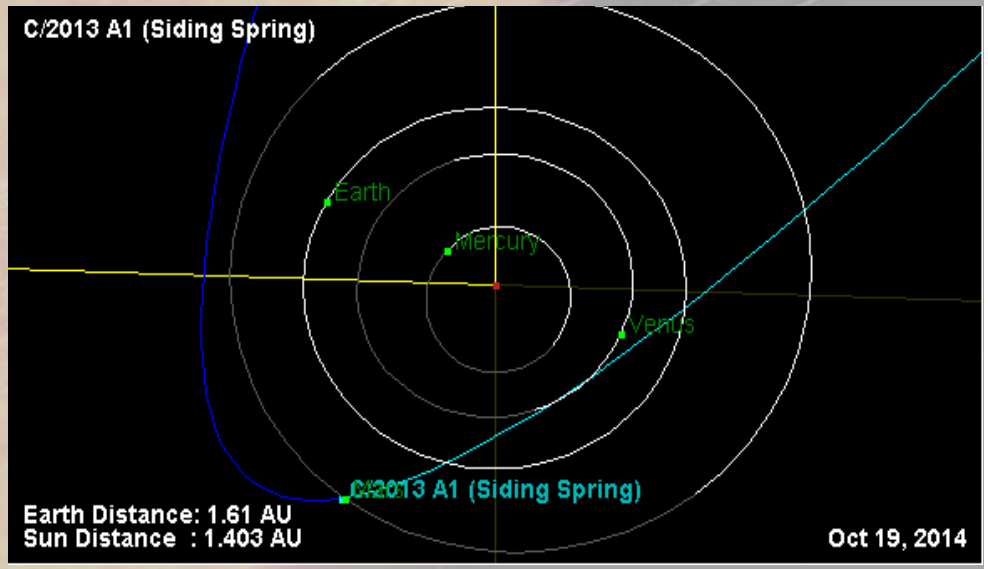
Atmosphere/Ionosphere/Surface Science, Magnetic Field & Solar Wind Interaction

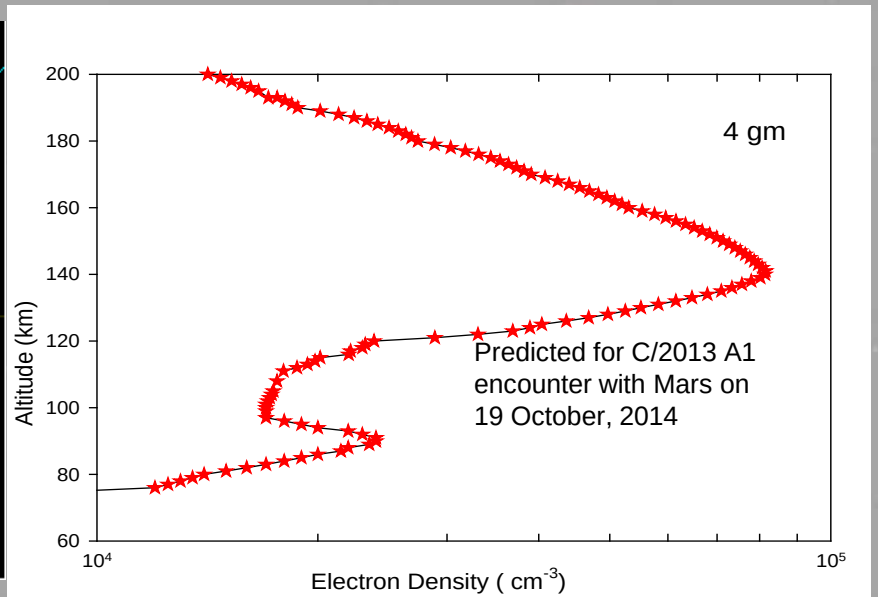



## Mangalyaan Orbit




## MAVEN Orbit



Thank you.....