LAST MINUTE MANEUVER

Dr. Dan

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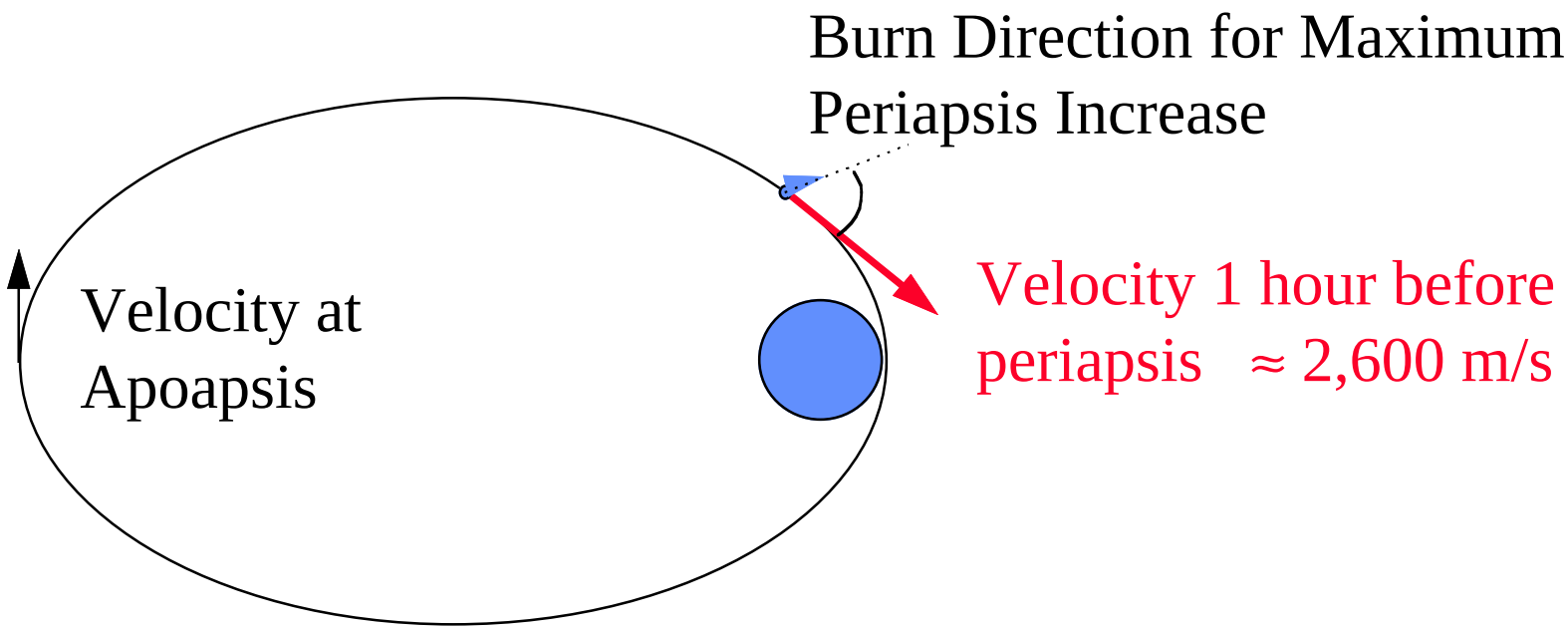
INTRODUCTION

- Simulations presented at the Mars Atmospheric Workshop showed a significant increase in the density in only ONE DAY (70%).

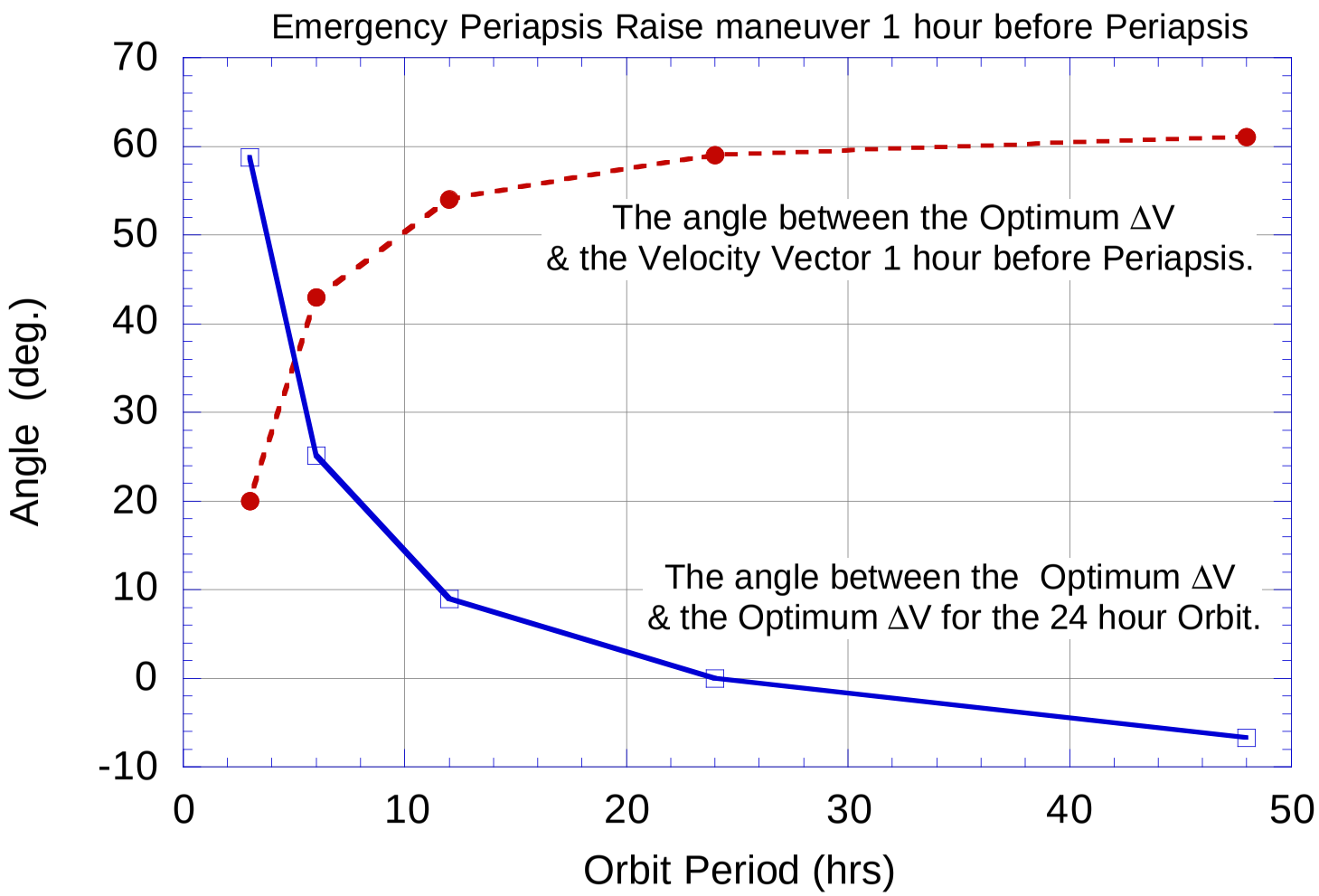
- For the Large Period Orbits, there is a significant amount of time between the last opportunity to maneuver (apoapsis) and the entry into the atmosphere (“periapsis”) i.e. ONE DAY for the early orbits.

- Is it possible to perform a Periapsis Raise Maneuver at the “Last Minute” if data that suggests that a major change has occured in the atmosphere but it is too late to perform a normal maneuver at apoapsis.

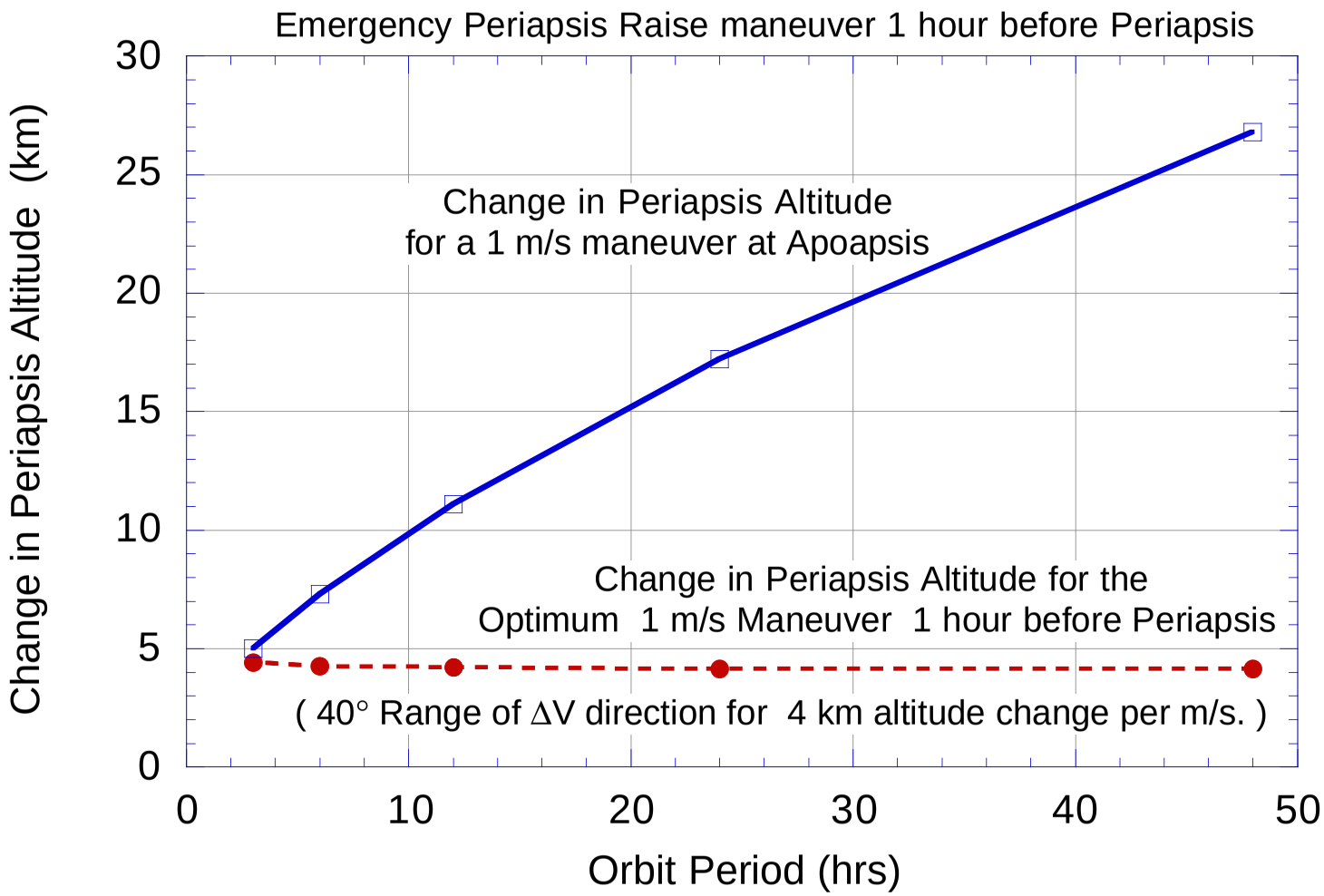
Geometry for LAST MINUTE MANEUVER



OPTIMUM ΔV ANGLES



PERIAPSIS ALTITUDE CHANGE



CONCLUSIONS

- 1 m/s Always gives about 4 km Periapsis Raise.
- Can use the same PRE-CANNED, OFF-THE-SHELF Maneuver for 48 hour orbits to 6 hour orbits.
- Recommend that we build this “LAST-MINUTE” Maneuver.