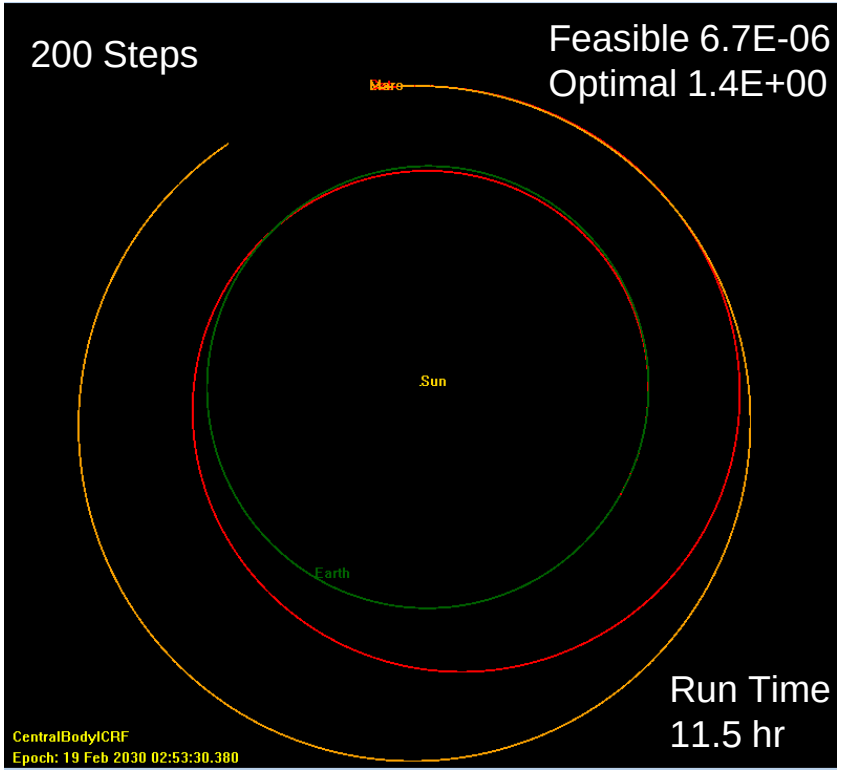
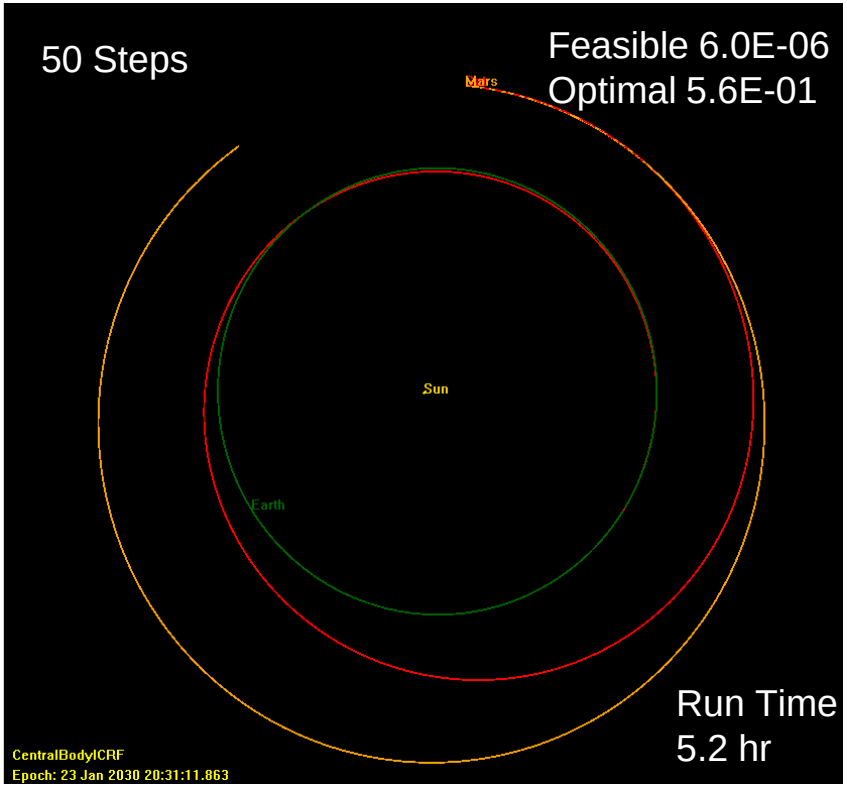
# Progress on finalizing GMAT Low-Thrust Solving Function

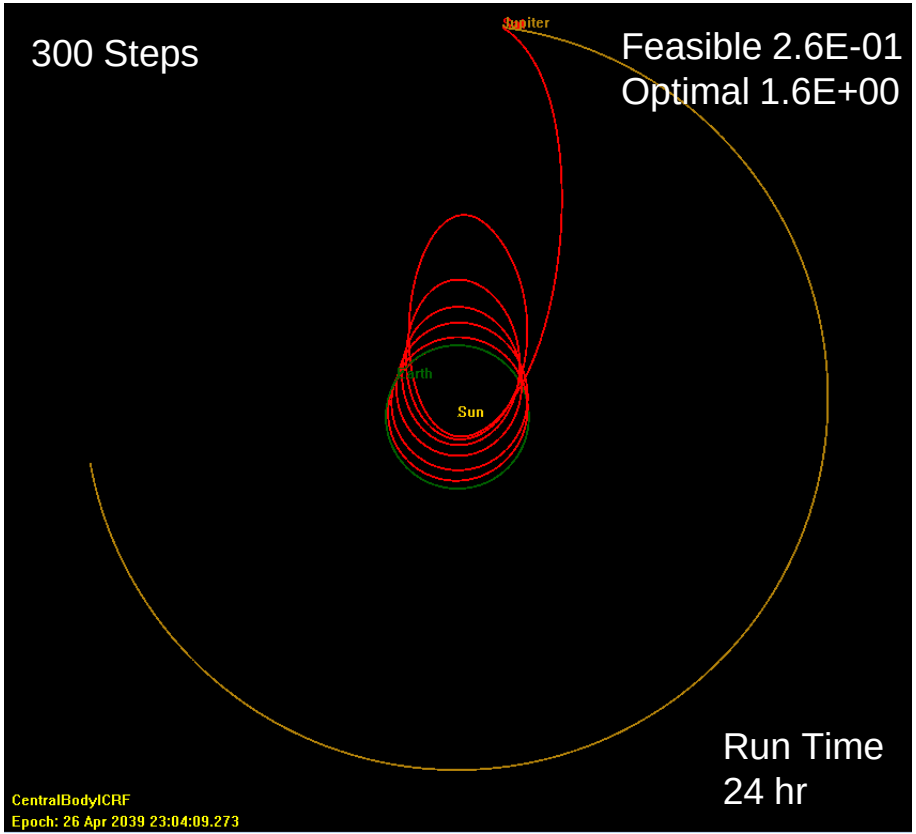
- Reduce the solver function to two files
- Standardized input options for the function
- Provide the option to run with or without optimization
  - Option to optimize for minimizing time of flight
  - Option to optimize for only achieving constraints
- Added supporting functions
  - Function to interpolate input data to increase or decrease the number of steps
  - Function that rewrites solver’s input Excel sheet
  - Function that interprets design variable vector if SNOPT optimization is paused or prematurely terminated

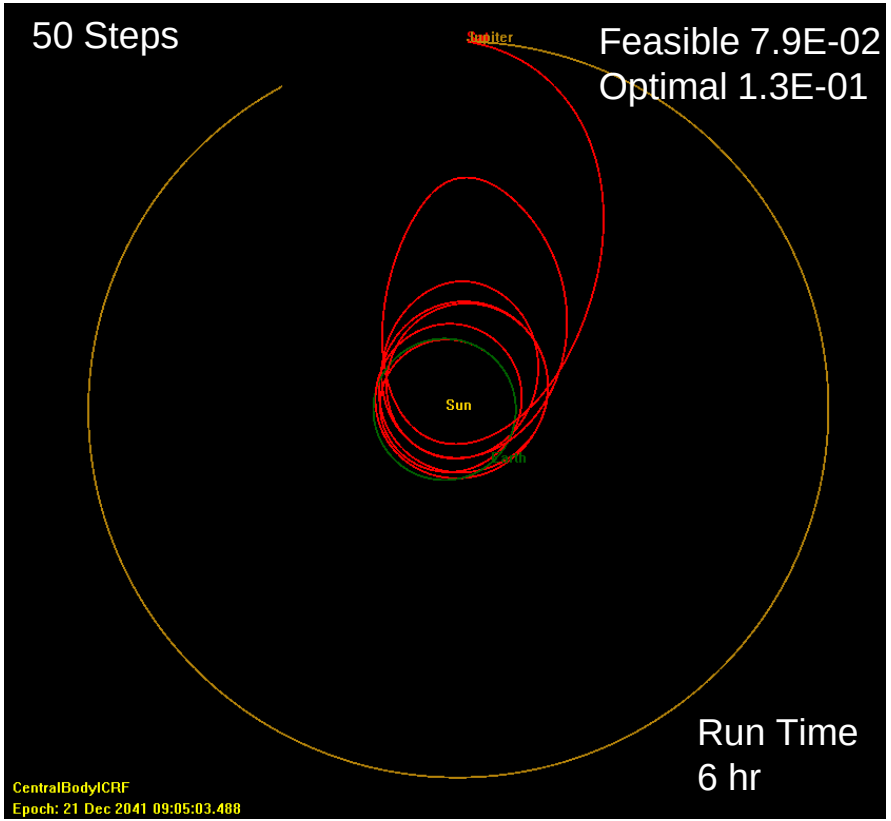
# Number of Time Steps Comparison (Earth To Mars FFS problem ran for 1000 iterations)



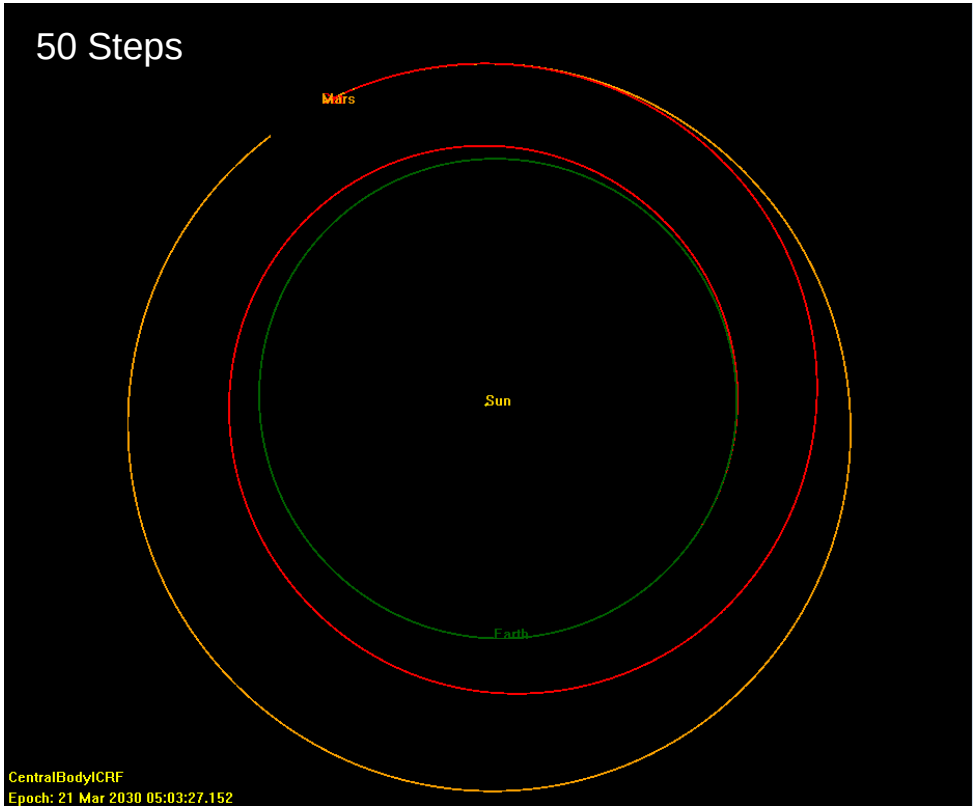
# Number of Time Steps Comparison (Earth To Jupiter FFS problem) (unconverged solution)



# Running without Time of Flight Objective Function (Mars Problem)

- Only minimize the constraints
- Run Time 55 minutes
  - Significant run time reduction
- Used as Initial guess for TOF optimization problem which only took an additional 2 hours to converge
- Norm of difference in final state vector:  3.3165512E-06



# Running without Time of Flight Objective Function (Jupiter Problem)

- Smaller TOF than solutions where TOF was the objective function
- Run Time 16 hours
  - Prematurely terminated before finishing
- Norm of difference in final state vector:  2.6069424E-02