Destination L1: A Thematic Unit

Minimum Energy Transfer Orbits

STUDENT REPORTING SHEET

GROUP SUMMARY

Group summaries can help you review and remember information from a text. Use the Group Summary chart below as you read the background information and procedures on your student activity sheet.

Group Summary for Minimum Energy Transfer Orbits	
Description	**Components**
Uses	**Historical Connection**

TECHNOLOGY APPLICATION

Use the spreadsheet, that has the transfer orbits from Earth to all the other planets that you created above to answer the following questions.

1. What is the orbital velocity of Earth?

2. Which planet has the fastest orbital velocity? What is its velocity?

3. If we are traveling to Mars, what would the velocity of our spacecraft be as it moves along the elliptical transfer orbit when it meets the circular orbit of Mars? (Column N)

4. Based on the information in column J, would our spacecraft have to slow down or speed up to enter into orbit with Mars?

5. How many days would this flight take?

Change the spreadsheet, so that the transfer orbits are from Mars to the other planets, by placing the distance in cell c5 into cell D2, then answer the following questions:

6. How many years would it take to get to Jupiter from Mars?

7. How fast do we need to get the spacecraft to go in the transfer orbit to get to Jupiter?

8. How much faster is this than Mar's orbital velocity?