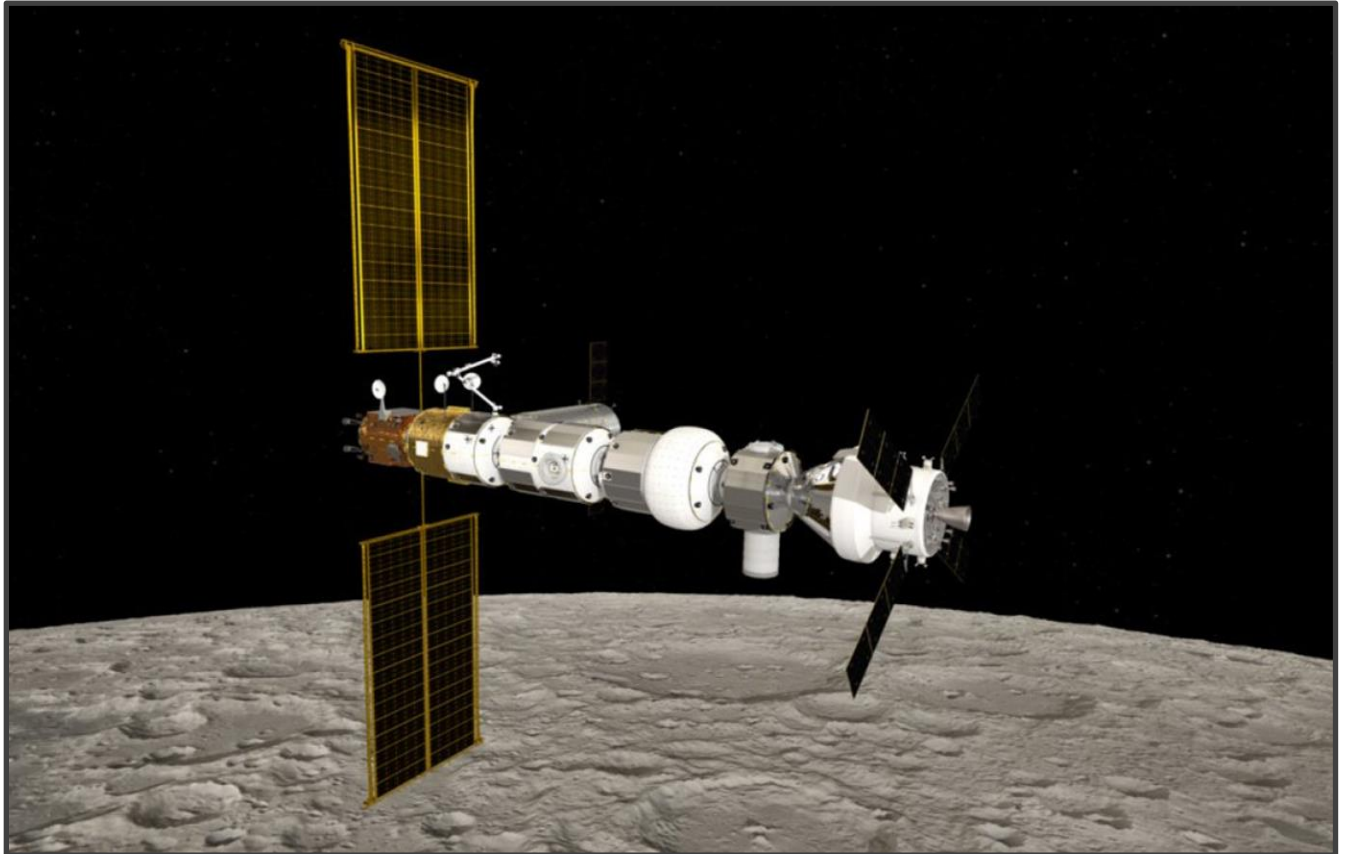


Spacegate Station Academy



Skype Program Engine Operation Lesson

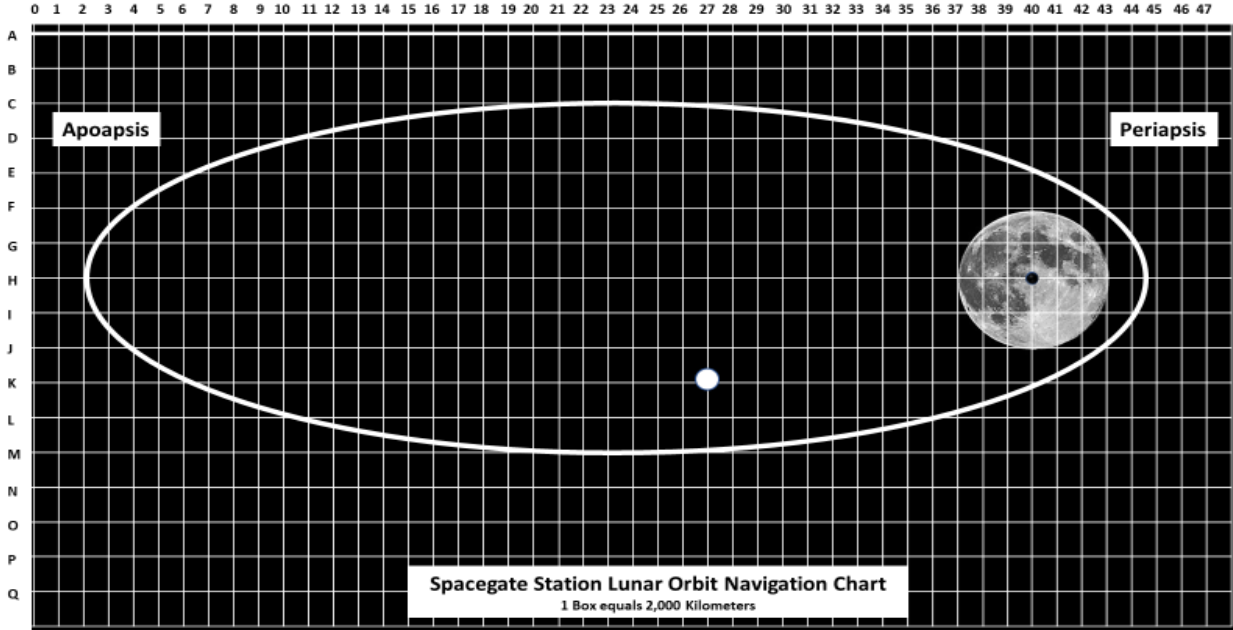
- ASCII table
- Burn Time Calculation Pre-Skype Practice Problem
- Engine Computer Code Calculation Sheet 1
- Engine Computer Code Calculation Sheet 1
- Practice Problem Answer Sheet

ASCII TABLE

Hex	Char	Hex	Char	Hex	Char	Hex	Char
0	[NULL]	20	[SPACE]	40	@	60	`
1	[START OF HEADING]	21	!	41	A	61	a
2	[START OF TEXT]	22	"	42	B	62	b
3	[END OF TEXT]	23	#	43	C	63	c
4	[END OF TRANSMISSION]	24	\$	44	D	64	d
5	[ENQUIRY]	25	%	45	E	65	e
6	[ACKNOWLEDGE]	26	&	46	F	66	f
7	[BELL]	27	'	47	G	67	g
8	[BACKSPACE]	28	(	48	H	68	h
9	[HORIZONTAL TAB]	29	)	49	I	69	i
A	[LINE FEED]	2A	*	4A	J	6A	j
B	[VERTICAL TAB]	2B	+	4B	K	6B	k
C	[FORM FEED]	2C	,	4C	L	6C	l
D	[CARRIAGE RETURN]	2D	-	4D	M	6D	m
E	[SHIFT OUT]	2E	.	4E	N	6E	n
F	[SHIFT IN]	2F	/	4F	O	6F	o
10	[DATA LINK ESCAPE]	30	0	50	P	70	p
11	[DEVICE CONTROL 1]	31	1	51	Q	71	q
12	[DEVICE CONTROL 2]	32	2	52	R	72	r
13	[DEVICE CONTROL 3]	33	3	53	S	73	s
14	[DEVICE CONTROL 4]	34	4	54	T	74	t
15	[NEGATIVE ACKNOWLEDGE]	35	5	55	U	75	u
16	[SYNCHRONOUS IDLE]	36	6	56	V	76	v
17	[ENG OF TRANS. BLOCK]	37	7	57	W	77	w
18	[CANCEL]	38	8	58	X	78	x
19	[END OF MEDIUM]	39	9	59	Y	79	y
1A	[SUBSTITUTE]	3A	:	5A	Z	7A	z
1B	[ESCAPE]	3B	;	5B	[	7B	{
1C	[FILE SEPARATOR]	3C	<	5C	\	7C	|
1D	[GROUP SEPARATOR]	3D	=	5D	]	7D	}
1E	[RECORD SEPARATOR]	3E	>	5E	^	7E	~
1F	[UNIT SEPARATOR]	3F	?	5F	_	7F	[DEL]

Burn Time Calculation Pre-Skype Practice Problem

Instructions: It is recommended that you class practice calculating and translating the information to hexadecimal the day before their live Skype session to maximize the experience.



Burn Time Calculation Pre-Skype Practice Worksheet

Provided Information:

1. Present location of the station* **K27**
2. Desired location of the station* **M27**
 The present orbital velocity **7.65 Km/second**

Calculated distance using Navigation Chart: _____

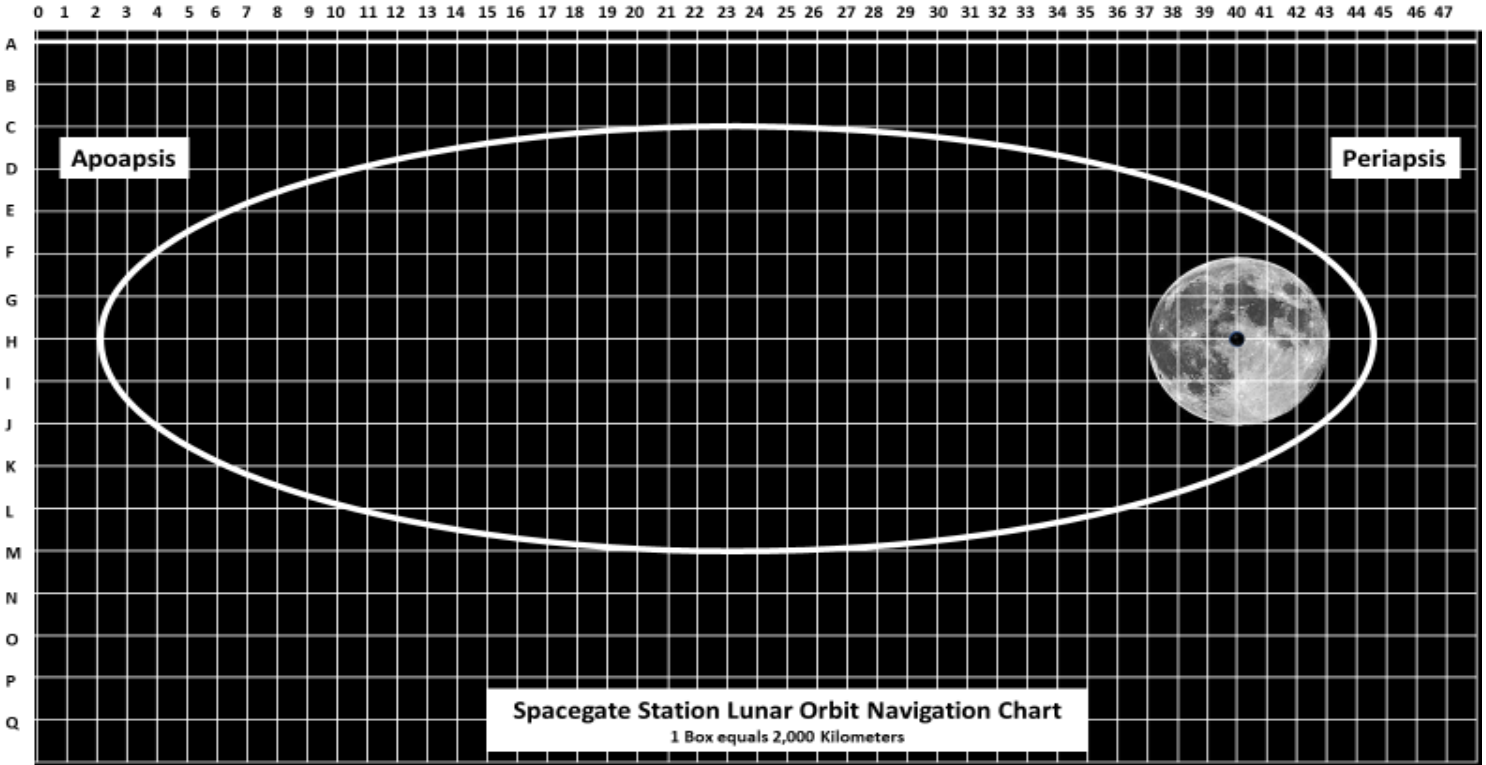
$$\frac{\text{Burn time (in seconds)}}{1} = \frac{\text{(Distance)}}{\text{(Velocity)}} \quad \frac{\text{_____}}{7.65 \text{ Km/sec}}$$

3. Burn time (in seconds)* = _____ seconds

ASCII Hexadecimal Conversion Chart

	Data Input Order	Command 1	Command 2	Value*	Command 3	ASCII Code
Input 1	Present Station Orbit Location Algorithm	Start of Text	Device Control 1		Carriage Return	
Input 2	Desired Station Orbit Location Algorithm	File Separation	Device Control 2		Null	
Input 3	Burn Time					

Skype Program Sheet 1



Provided Information:

1. Present location of the station* _____
2. Desired location of the station* _____
- The present orbital velocity _____ **Km/second**

Calculated distance using Navigation Chart: _____

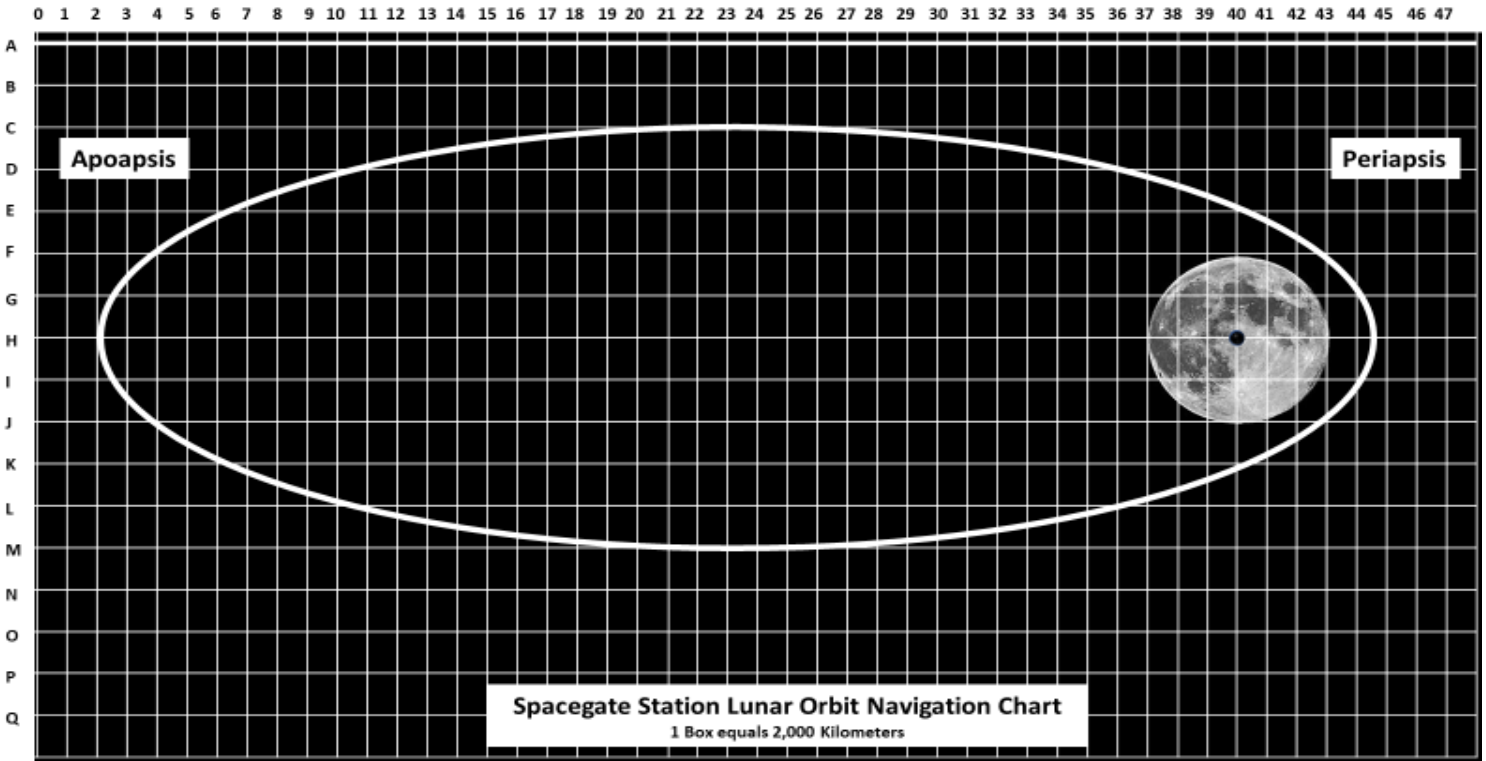
Calculate Burn time (in seconds) = $\frac{(\text{Distance})}{(\text{Velocity})}$ _____ Km/sec

3. Burn time (in seconds)* = _____ seconds

ASCII Hexadecimal Conversion Chart

	Data Input Order	Command 1	Command 2	Value*	Command 3	ASCII Code
Input 1	Present Station Orbit Location Algorithm	Start of Text	Device Control 1		Carriage Return	
Input 2	Desired Station Orbit Location Algorithm	File Separation	Device Control 2		Null	
Input 3	Burn Time					

Skype Program Sheet 2



Provided Information:

1. Present location of the station* _____.
 2. Desired location of the station* _____.
- The present orbital velocity _____ **Km/second**

Calculated distance using Navigation Chart: _____

Calculate Burn time (in seconds) = $\frac{\text{(Distance)}}{\text{(Velocity)}}$ _____ Km/sec

3. Burn time (in seconds)* = _____ seconds

ASCII Hexadecimal Conversion Chart

	Data Input Order	Command 1	Command 2	Value*	Command 3	ASCII Code
Input 1	Present Station Orbit Location Algorithm	Start of Text	Device Control 1		Carriage Return	
Input 2	Desired Station Orbit Location Algorithm	File Separation	Device Control 2		Null	
Input 3	Burn Time					

Practice Problem Answers

Provided Information:

1. Present location of the station* **K27**
2. Desired location of the station* **M27**
 The present orbital velocity **7.65 Km/second**

Calculated distance using Navigation Chart: **4,000 KM**

$$\frac{\text{Burn time (in seconds)}}{1} = \frac{(\text{Distance})}{(\text{Velocity})} = \frac{4,000 \text{ Km}}{7.65 \text{ Km/sec}}$$

3. Burn time (in seconds)* = **523** seconds

ASCII Hexadecimal Conversion Chart

	Data Input Order	Command 1	Command 2	Value*	Command 3	ASCII Code
Input 1	Present Station Orbit Location Algorithm	Start of Text	Device Control 1	K27	Carriage Return	2114B3237D
Input 2	Desired Station Orbit Location Algorithm	File Separation	Device Control 2	M27	Null	1C124D32370
Input 3	Burn Time			523		353233