

# Building a Tellurion



### What Is a Tellurion?

**Orrery**  
Planets in the Solar System

**Tellurion**  
Earth and Moon relative to the Sun

UNIVERSITY OF LIVERPOOL

2

### Why Build a Tellurion?

It can be used to demonstrate ...

- Day and Night
- Changing Seasons
- Lunar Phases
- Lunar Eclipses
- Solar Eclipses

UNIVERSITY OF LIVERPOOL

3

### How It Works

Three different types of lunar month are built into the mechanism ...

- Synodic**  
29.5 days *New Moon to New Moon*
- Draconic**  
27.2 days *Node to Node*
- Anomalistic**  
27.5 days *Perigee to Perigee*

UNIVERSITY OF LIVERPOOL

4

# Building a Tellurion

### Collect the 52 Parts

... 52

UNIVERSITY OF LIVERPOOL

5

### Instructions

| Part Number | Component Name | Quantity | Supplied with Issues |
|-------------|----------------|----------|----------------------|
| 14          | SPINDLE SCREW  | 1        | 6                    |
| 15          | SPINDLE COLLAR | 1        | 6                    |
| 16          | 91-TOOTH GEAR  | 1        | 6                    |
| 17          | 91-TOOTH GEAR  | 1        | 6                    |
| 18          | 91-TOOTH GEAR  | 1        | 6                    |
| 19          | 91-TOOTH GEAR  | 1        | 6                    |
| 20          | 91-TOOTH GEAR  | 1        | 6                    |
| 21          | 91-TOOTH GEAR  | 1        | 6                    |
| 22          | 91-TOOTH GEAR  | 1        | 6                    |
| 23          | 91-TOOTH GEAR  | 1        | 6                    |
| 24          | 91-TOOTH GEAR  | 1        | 6                    |
| 25          | 91-TOOTH GEAR  | 1        | 6                    |
| 26          | 91-TOOTH GEAR  | 1        | 6                    |
| 27          | 91-TOOTH GEAR  | 1        | 6                    |
| 28          | 91-TOOTH GEAR  | 1        | 6                    |
| 29          | 91-TOOTH GEAR  | 1        | 6                    |
| 30          | 91-TOOTH GEAR  | 1        | 6                    |
| 31          | 91-TOOTH GEAR  | 1        | 6                    |
| 32          | 91-TOOTH GEAR  | 1        | 6                    |
| 33          | 91-TOOTH GEAR  | 1        | 6                    |
| 34          | 91-TOOTH GEAR  | 1        | 6                    |
| 35          | 91-TOOTH GEAR  | 1        | 6                    |
| 36          | 91-TOOTH GEAR  | 1        | 6                    |
| 37          | 91-TOOTH GEAR  | 1        | 6                    |
| 38          | 91-TOOTH GEAR  | 1        | 6                    |
| 39          | 91-TOOTH GEAR  | 1        | 6                    |
| 40          | 91-TOOTH GEAR  | 1        | 6                    |
| 41          | 91-TOOTH GEAR  | 1        | 6                    |
| 42          | 91-TOOTH GEAR  | 1        | 6                    |
| 43          | 91-TOOTH GEAR  | 1        | 6                    |
| 44          | 91-TOOTH GEAR  | 1        | 6                    |
| 45          | 91-TOOTH GEAR  | 1        | 6                    |
| 46          | 91-TOOTH GEAR  | 1        | 6                    |
| 47          | 91-TOOTH GEAR  | 1        | 6                    |
| 48          | 91-TOOTH GEAR  | 1        | 6                    |
| 49          | 91-TOOTH GEAR  | 1        | 6                    |
| 50          | 91-TOOTH GEAR  | 1        | 6                    |
| 51          | 91-TOOTH GEAR  | 1        | 6                    |
| 52          | 91-TOOTH GEAR  | 1        | 6                    |

UNIVERSITY OF LIVERPOOL

6

Which part has which number and comes with which magazine?

How do these parts fit together?

Exploded view of this assembly

Finished view of this assembly

### Find the 52 Parts

UNIVERSITY OF LIVERPOOL

7

### Duplication of Parts Led To ...

UNIVERSITY OF LIVERPOOL

8

# Building a Tellurion

**Beware!**



For some, collecting parts and building orreries and tellurions can be addictive (or maybe an obsession).

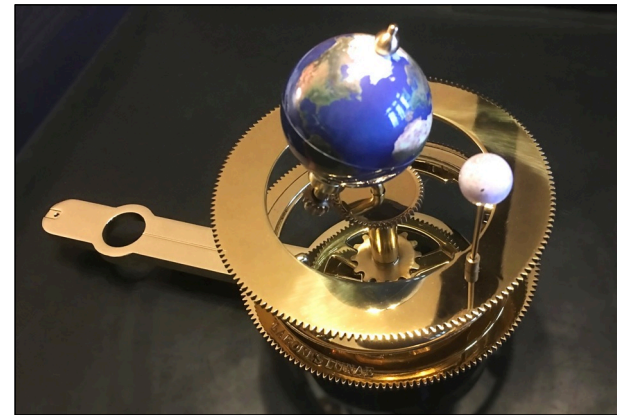
**Full Set of 52 Parts**



**Earth**



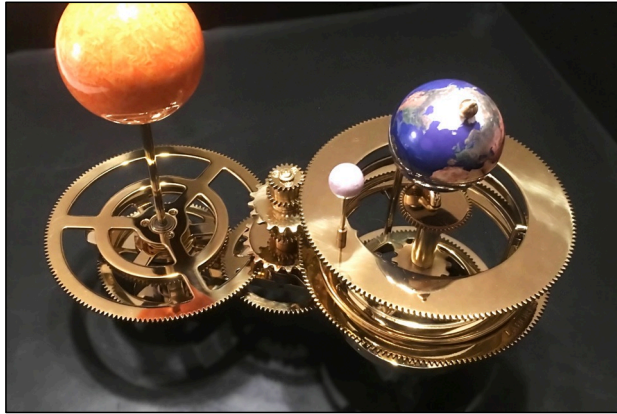
**Earth + Moon**





# Building a Tellurion

Sun + Earth + Moon



Hints and Tips

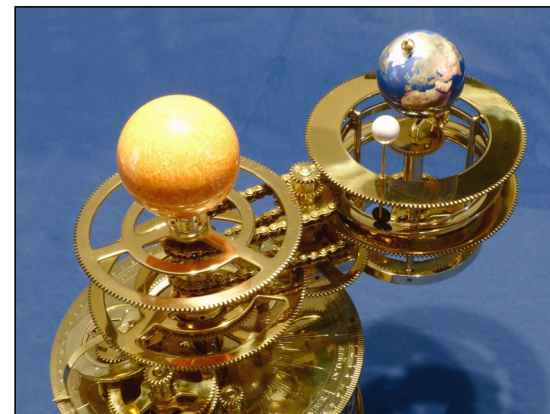


10 Hours Later



The tellurion took about 10 hours to build and a few hours to fine tune.

Tellurion Build Complete



# Building a Tellurion

**The Sun Shines!**



UNIVERSITY OF LIVERPOOL

17

**Building a Tellurion**



UNIVERSITY OF LIVERPOOL

18

**Eagle Moss**

General information from Eagle Moss distributor  
<https://en-gb.eagle-moss.com/our-other-collections/eagle-moss-classics/build-model-earth-moon-sun-orbiter>

Back issues and parts for orrery and tellurion  
<https://shop.eagle-moss.com/solar-system>

Partworkscollectables  
<https://partworkscollectables.co.uk/Eagle-moss-Build-A-Model-Solar-System>  
<https://partworkscollectables.co.uk/Eagle-moss-Build-A-Model-Earth-Moon-Sun-Orbiter>

Back issues and parts also available from  
Amazon / eBay / Facebook

UNIVERSITY OF LIVERPOOL

19



**Building a Tellurion**

[www.liverpool.ac.uk/~sdb/Talks](http://www.liverpool.ac.uk/~sdb/Talks)

Steve Barrett  
Sue and Rob Dipple

BASoc 5 Apr 2021