

Science & Technology

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Topic Mapping

① Basic Concepts

- 1) Space
- 2) Space Technology
- 3) Orbits

② Launch Vehicles

Legacy

- SLV
- ASLV

In-service

- 1) PSLV
- 2) GSLV
- 3) LVM-3
- 4) SSLV

Experimental

- Sounding rockets

Under developments

- RLV

③ Space-crafts & Applications

↳ 1) Sat Com

2) EO

3) Sat Nav

4) Observational Satellites

④ Spl. Missions

⑤ Other topics

→ about ISRO (PDF)

→ other space missions (International)

-
- (1) Chandrayaan
 - (2) Mangalyaan
 - (3) Aditya L1
 - (4) Gaganyaan

I.

Basic Concepts

to
near absent

KARMEN'S LINE

beyond ~100 km
of altitude

followed
by UN
& bilateral
treaties
on space

focus of
space agencies'
activities

Features

- 1) No (nearly no) atmosphere
- 2) No suspended particles
- 3) Weak gravitational pull
- 4) No sound transmission
- 5) No object (except celestial objects)
- 6) Requirement of orbital velocity to maintain a path

Astronomy

The spl. branch
of Physics
(+ Geography)
to study space

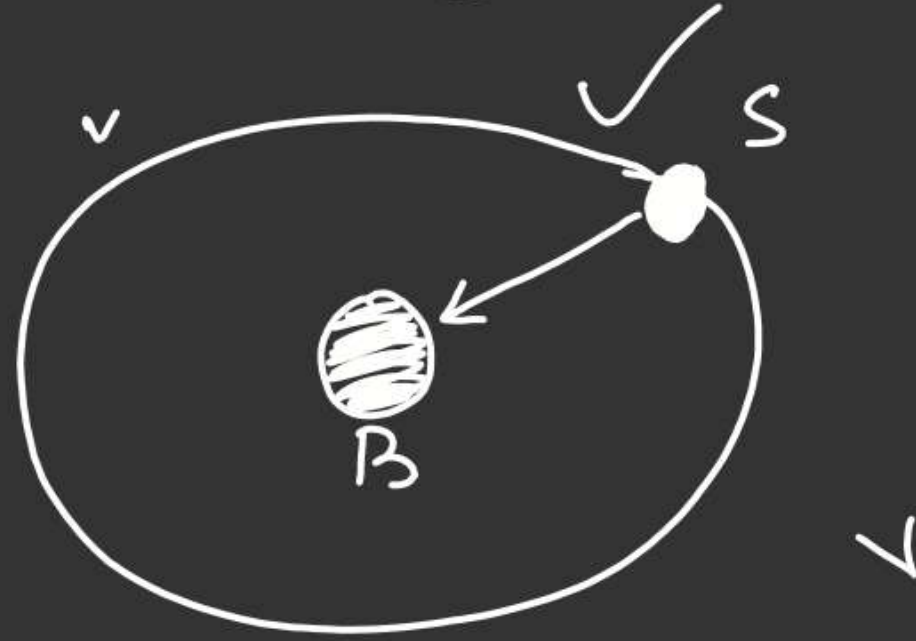
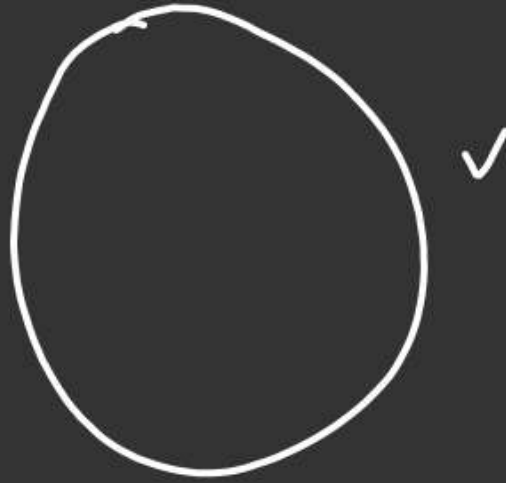
Space Technology

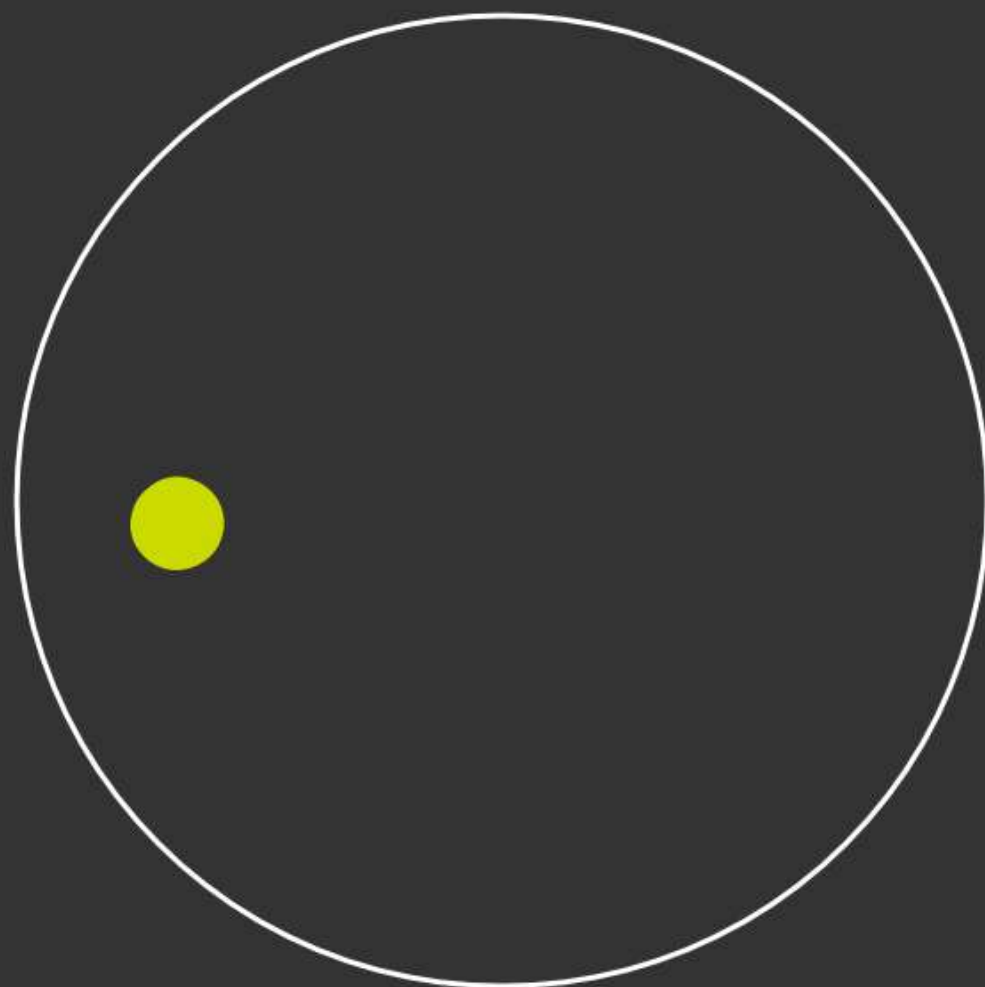
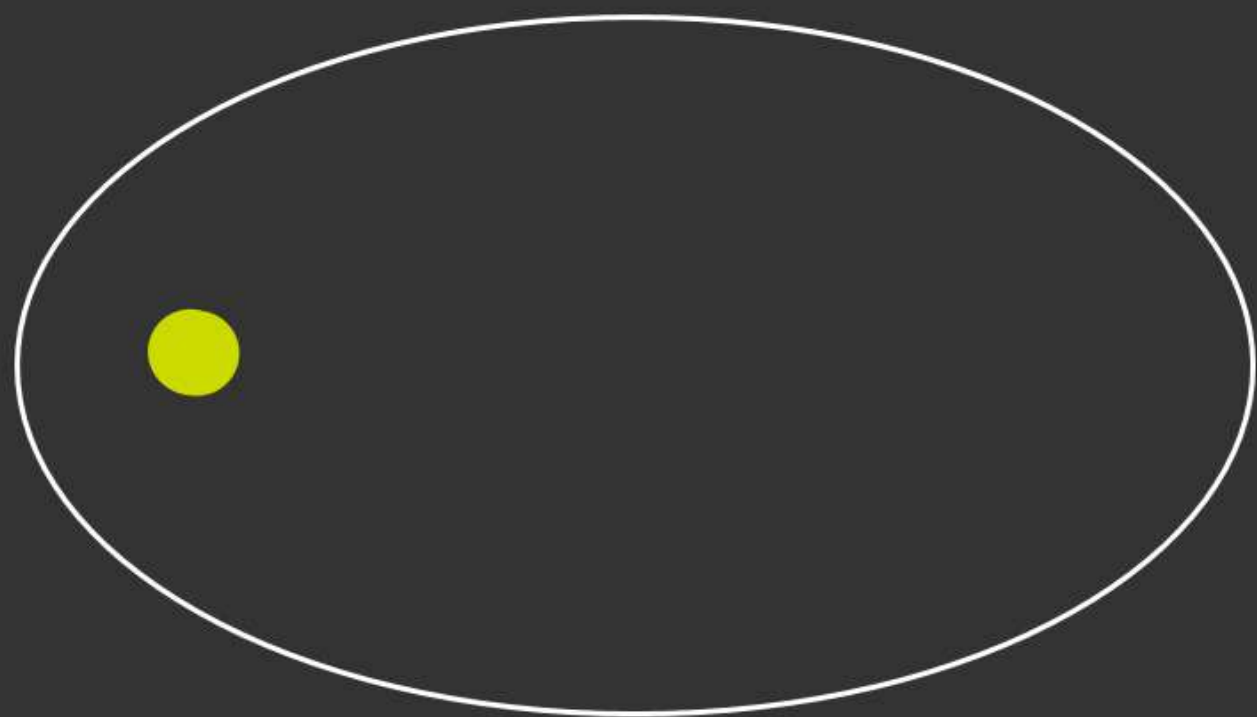
Integration of
Astronomy + Engineering
⇒ Several purposes: -
(P.T.O.)

→ developing tools for various
beneficial applications:

- (1) Long distance telecommunication
 - (2) Modern internet
 - (3) Broadcast Technology & DTT transmission
 - (4) Weather forecasting
 - (5) Earth observⁿ
 - (6) Research
- etc.

2. Orbit



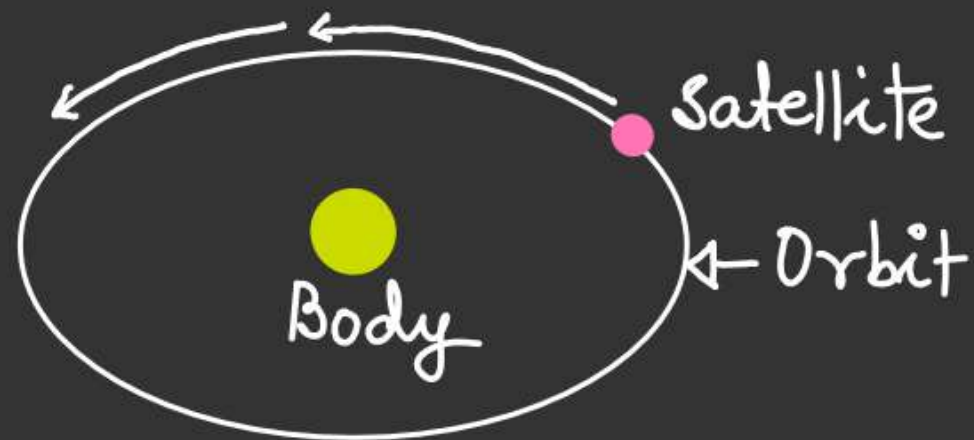


Orbit

a closed path in the space

along which one body revolves
(satellite)

around other.
(body)



Types

3 criteria

(1) The focal
body

(2) Shape
& Centricity

(3) Altitude
(in case of
Earth Orbits)

A. Based on the focal body

Earth Orbits

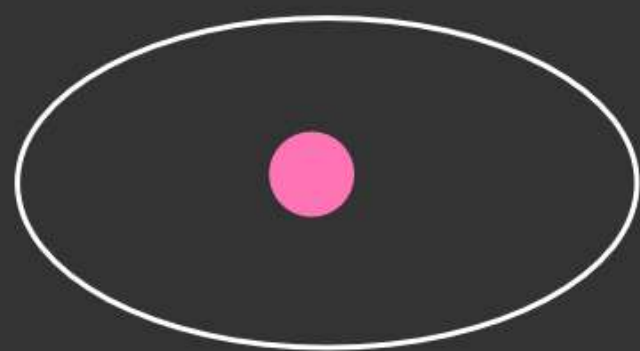
- LEO
- MEO
- GEO
- SSPO

etc.

Non-Earth Orbits

1. Lunar Orbits
 2. Martian Orbits
 3. Lagrange Point Orbits
- etc.

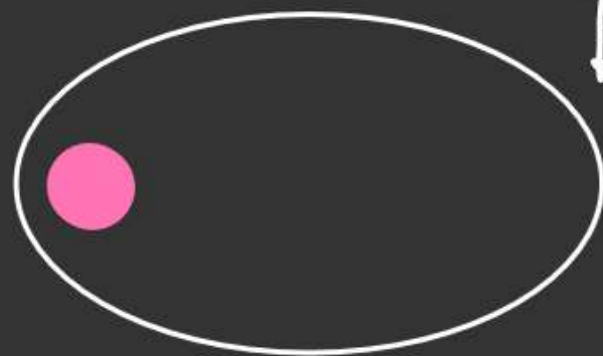
2. Shape & Centricity



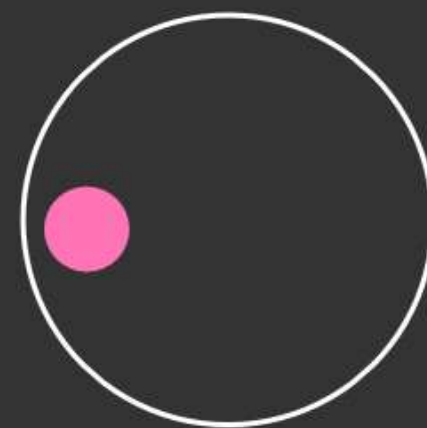
Elliptical
Centric



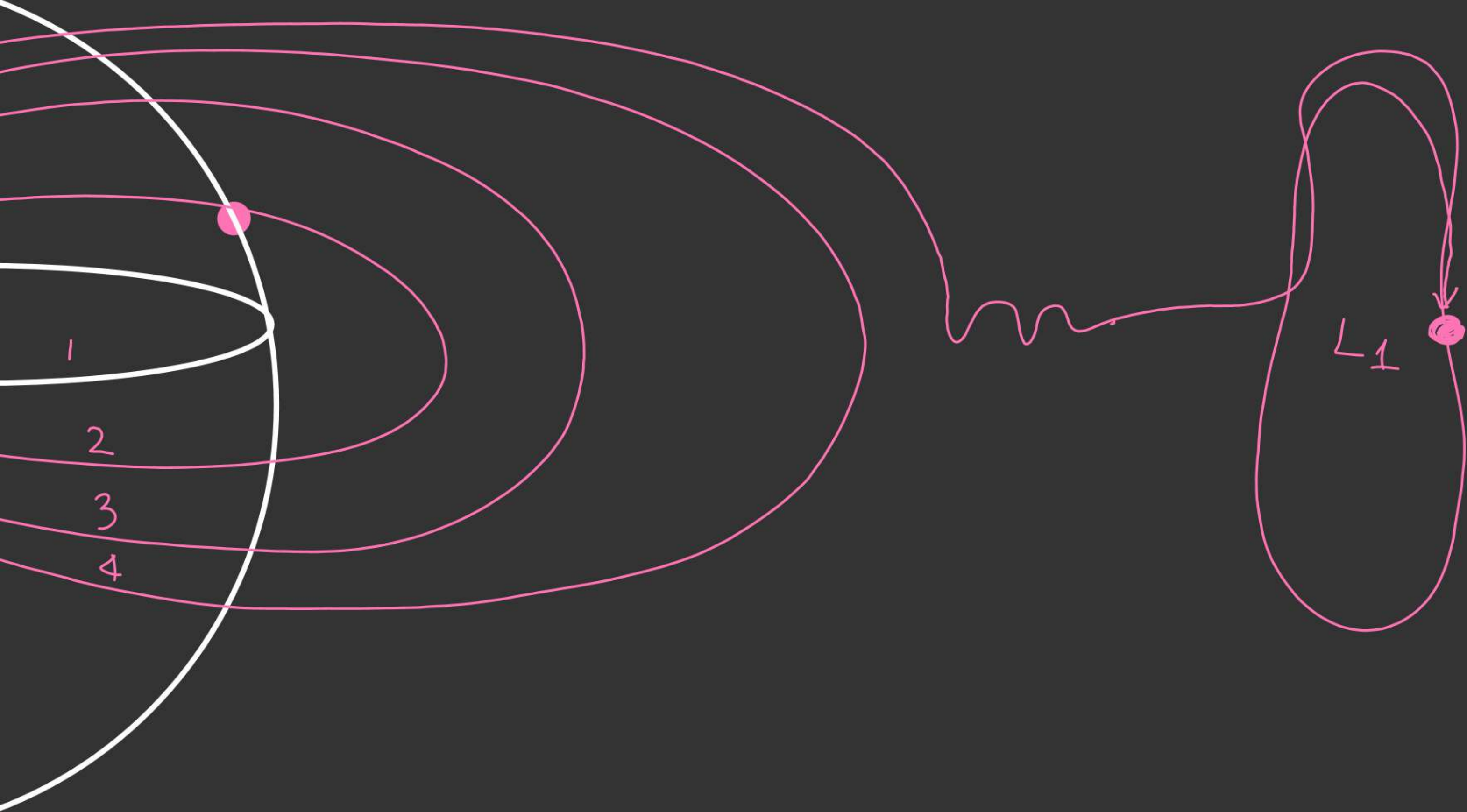
Circular
Centric



Elliptical
Eccentric



Circular
Eccentric



Perigee

Apogee

eg.

- Geostationary Orbit
- Geosynchronous Orbit
- Lunar Orbit
- Martian "
- Lagrangian "

