

Solar Cycle induced by Rotating Medium

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Introduction

- Scientific Publication: “Does a Spin–Orbit Coupling Between the Sun and the Jovian Planets Govern the Solar Cycle?”
(*I. R. G. Wilson, B. D. Carter, and I. A. Waite, 2007*):
 - Presents evidence to show that changes in the Sun’s equatorial rotation rate are synchronized with changes in its orbital motion about the barycentre of the Solar System
 - Proposes that this synchronization is indicative of a spin–orbit coupling mechanism operating between the Jovian planets and the Sun
 - While data are consistent with the idea that there is a spin–orbit coupling between Jupiter and the Sun, it does not tell anything about the true nature of the underlying mechanism that might be causing this coupling
- This paper proposes the Rotating Medium Model as the underlying mechanism for the Spin-Orbit Coupling.

Rotating Medium Model

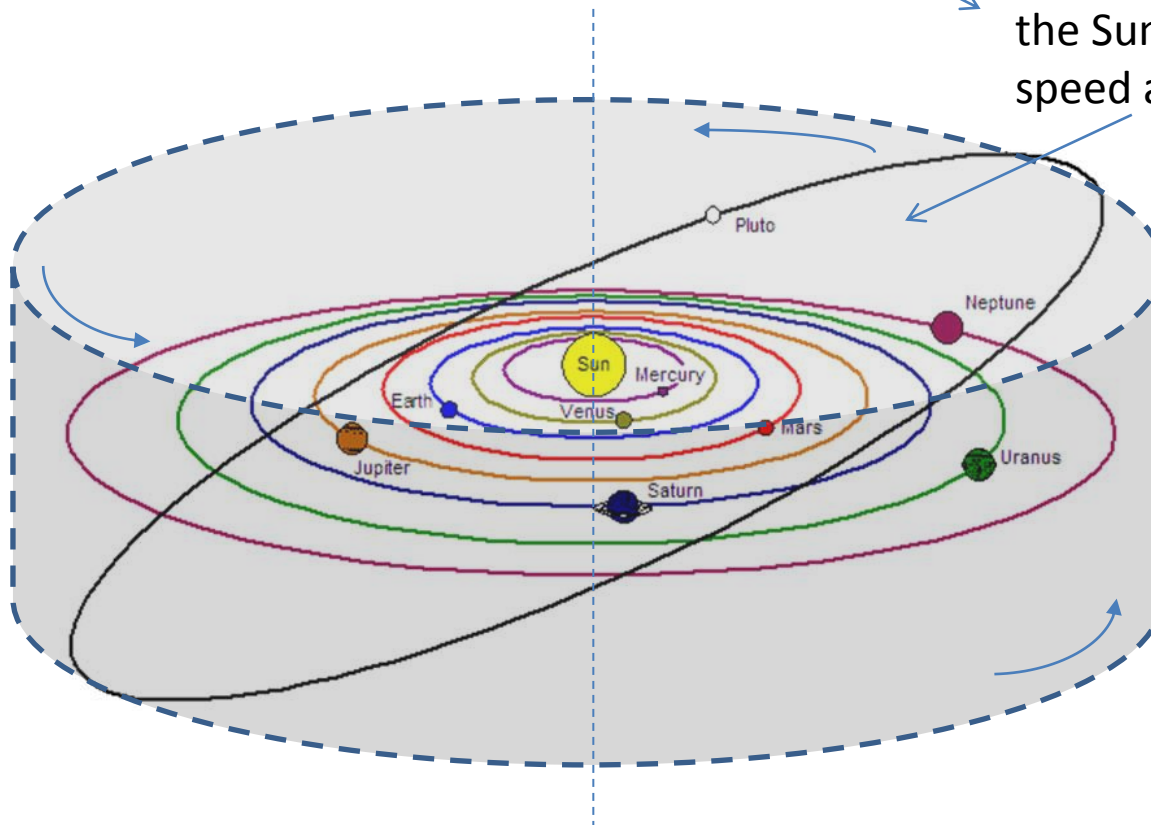
Model and evidence introduced in
paper: "Working model Stellar
Planetary Aberration" on:

the general science
journal

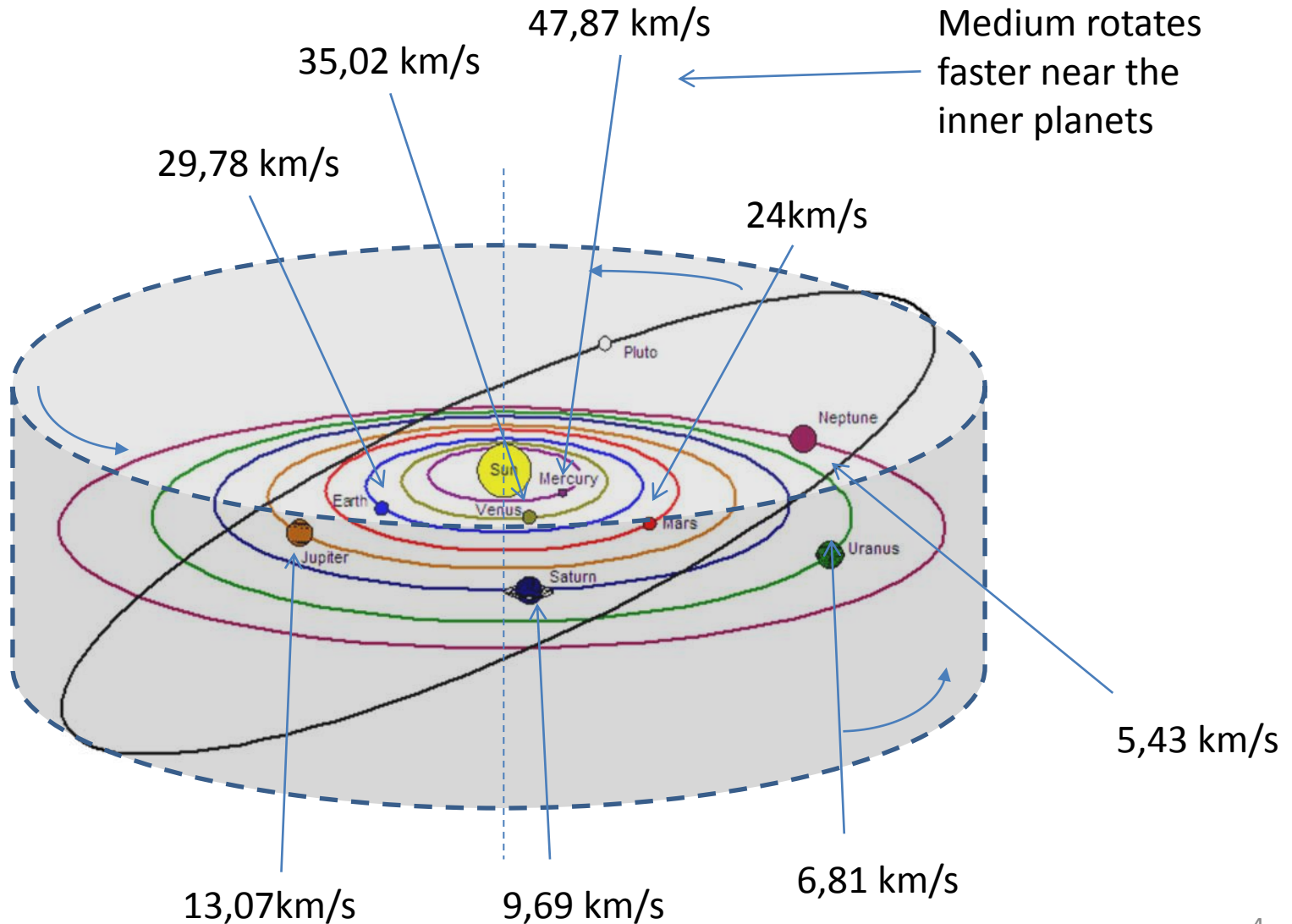
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Stellar aberration as observed during
stellar and planetary occultations by
the moon can be explained through a
rotating medium.

Medium rotates around
the Sun with the same
speed as the planets



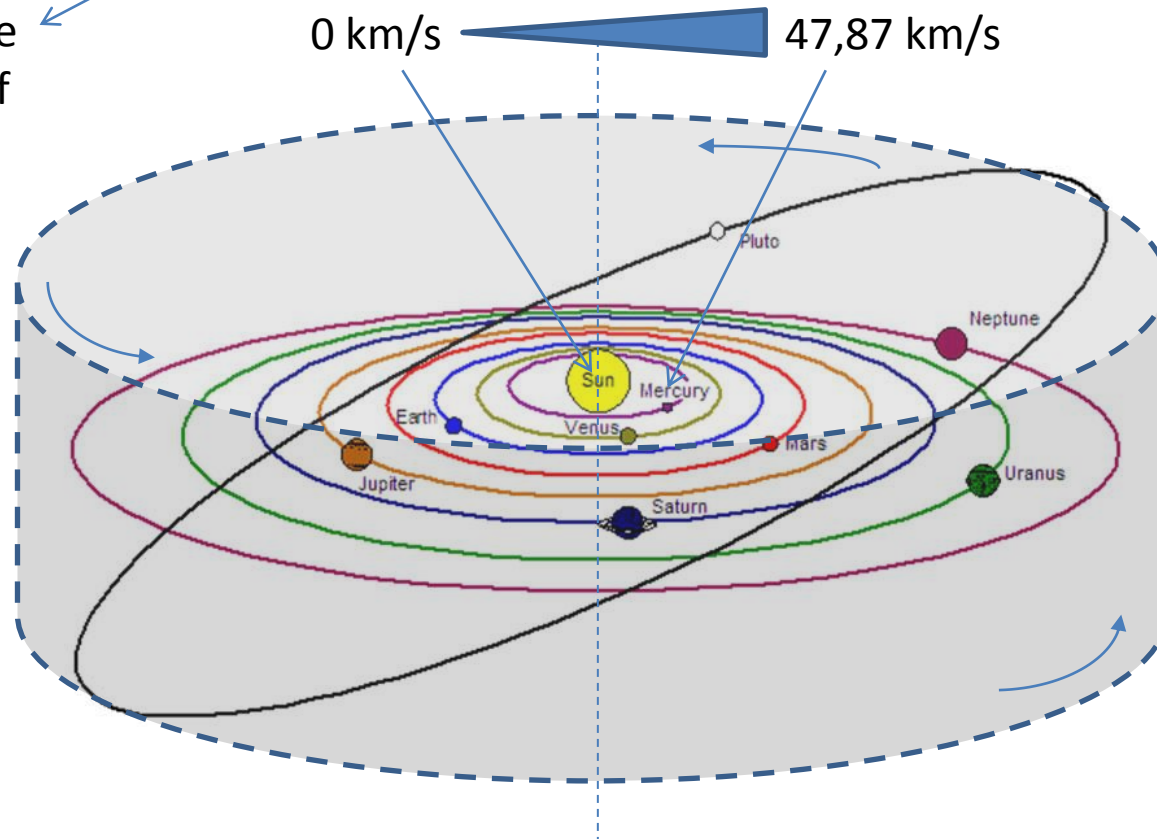
Rotating Medium Model



Rotating Medium Model

A significant velocity gradient must exist in the rotating medium between Mercury and the Center of Mass of Solar system

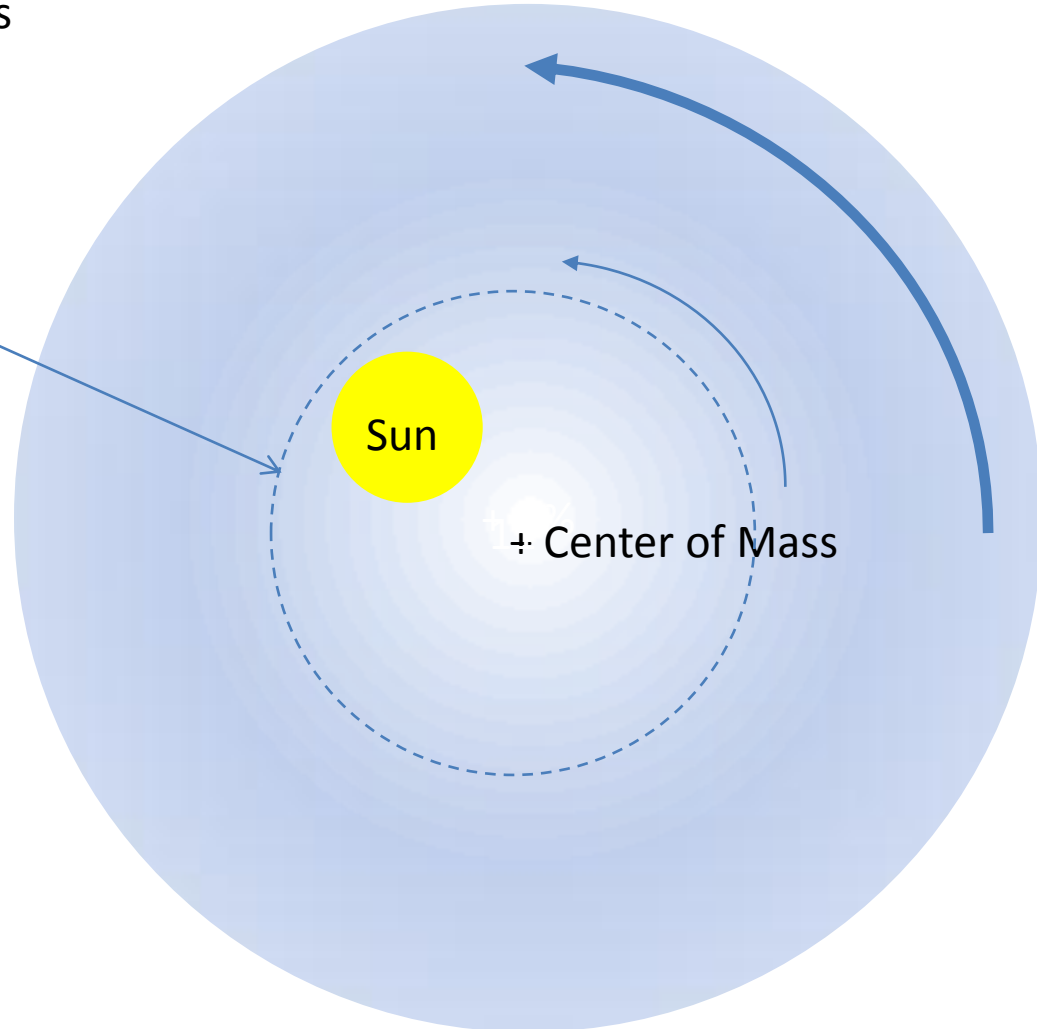
Medium rotates slower nearby the Center of Mass of the Solar System



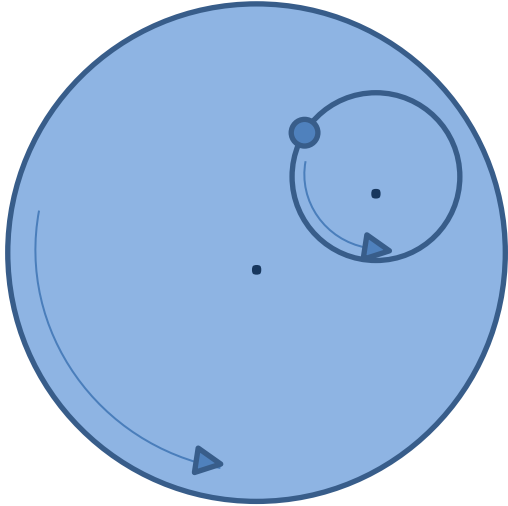
Rotating Medium Model

The centre of the Sun moves about the Center of Mass of the Solar System in a series of complex spirals with the distance between the two varying from 0.01 to 2.19 solar radii

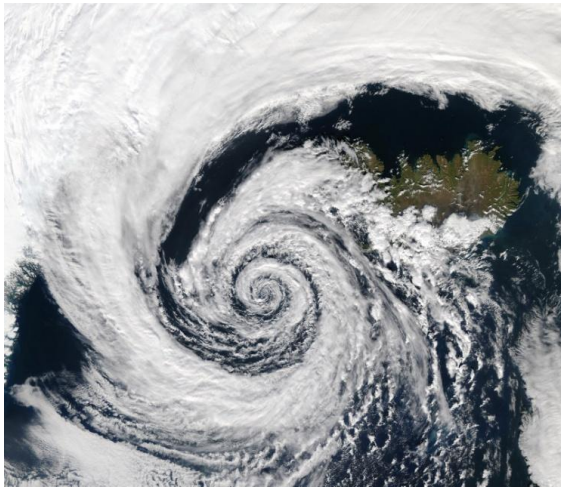
The more the Sun is separated from the Center of Mass of the Solar System, the more the Sun becomes affected by the rotating medium



Coriolis Effect



The Coriolis effect enforces moving objects to follow the rotation of the rotating frame

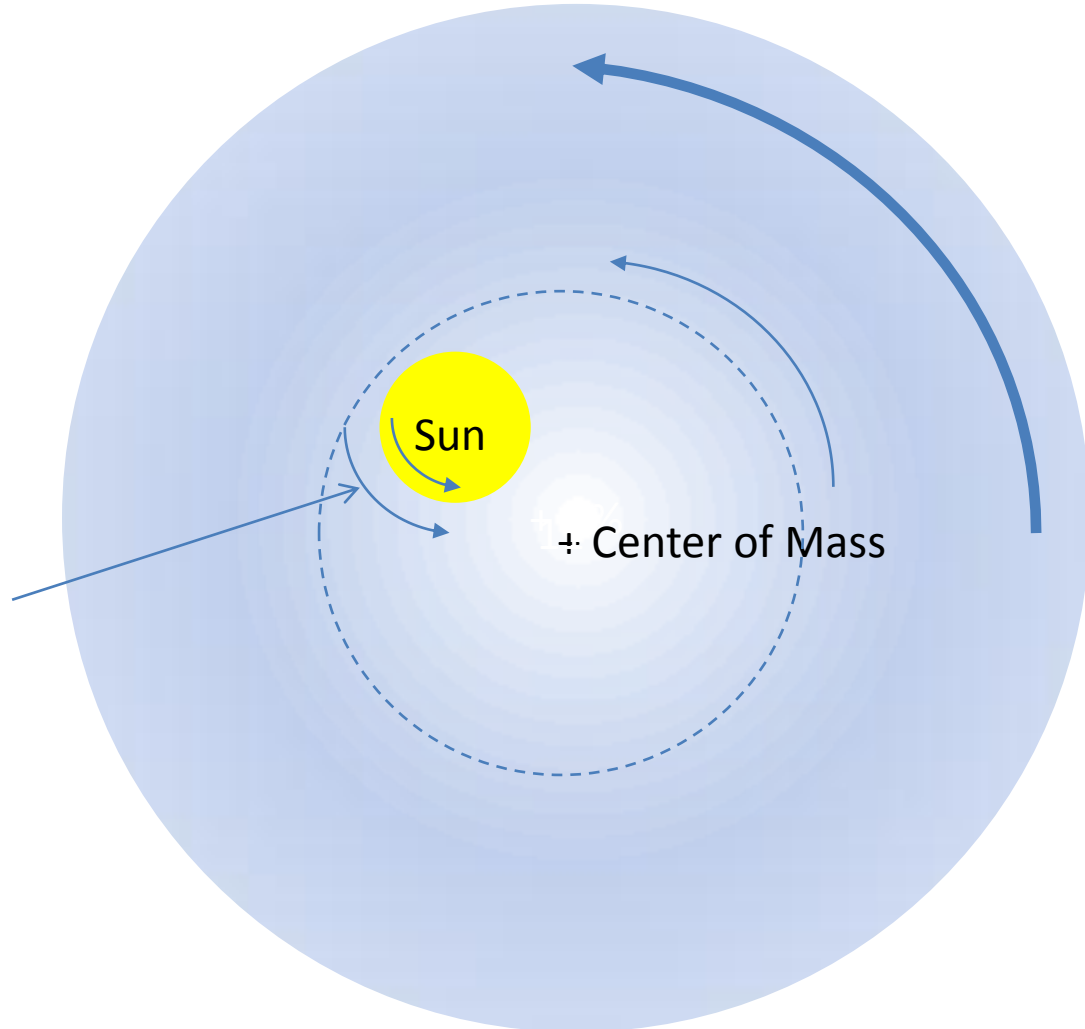


Rotating Medium Model/Coriolis Effect

The more the Sun is separated from the Center of Mass of the Solar System, the more the Sun becomes affected by the rotating medium



The Coriolis Effect induces an increased equatorial rotation rate .



Rotating Medium Model/Coriolis Effect

The relative alignment of Jovian planets determine the orientation and amount of separation between Sun and the Center of Mass of the Solar System

The more the Sun is separated from the Center of Mass of the Solar System, the more the Sun becomes affected by the rotating medium

spin-orbit coupling

Torsional oscillations seen on the surface of the Sun

The Coriolis Effect Enforces an increased spin of the Solar Surface.

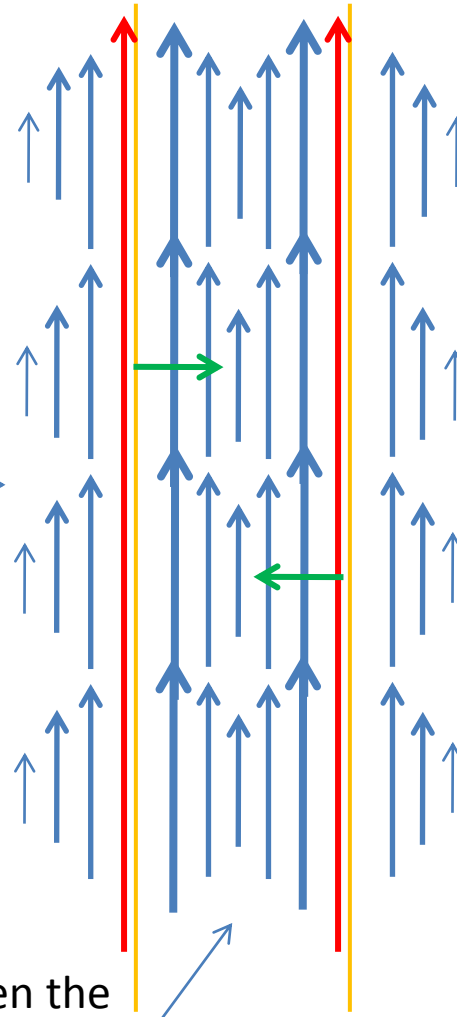
Magnetism

Model introduced in paper:
"Magnetism - Gravity
Working Model" on:

the general science
journal

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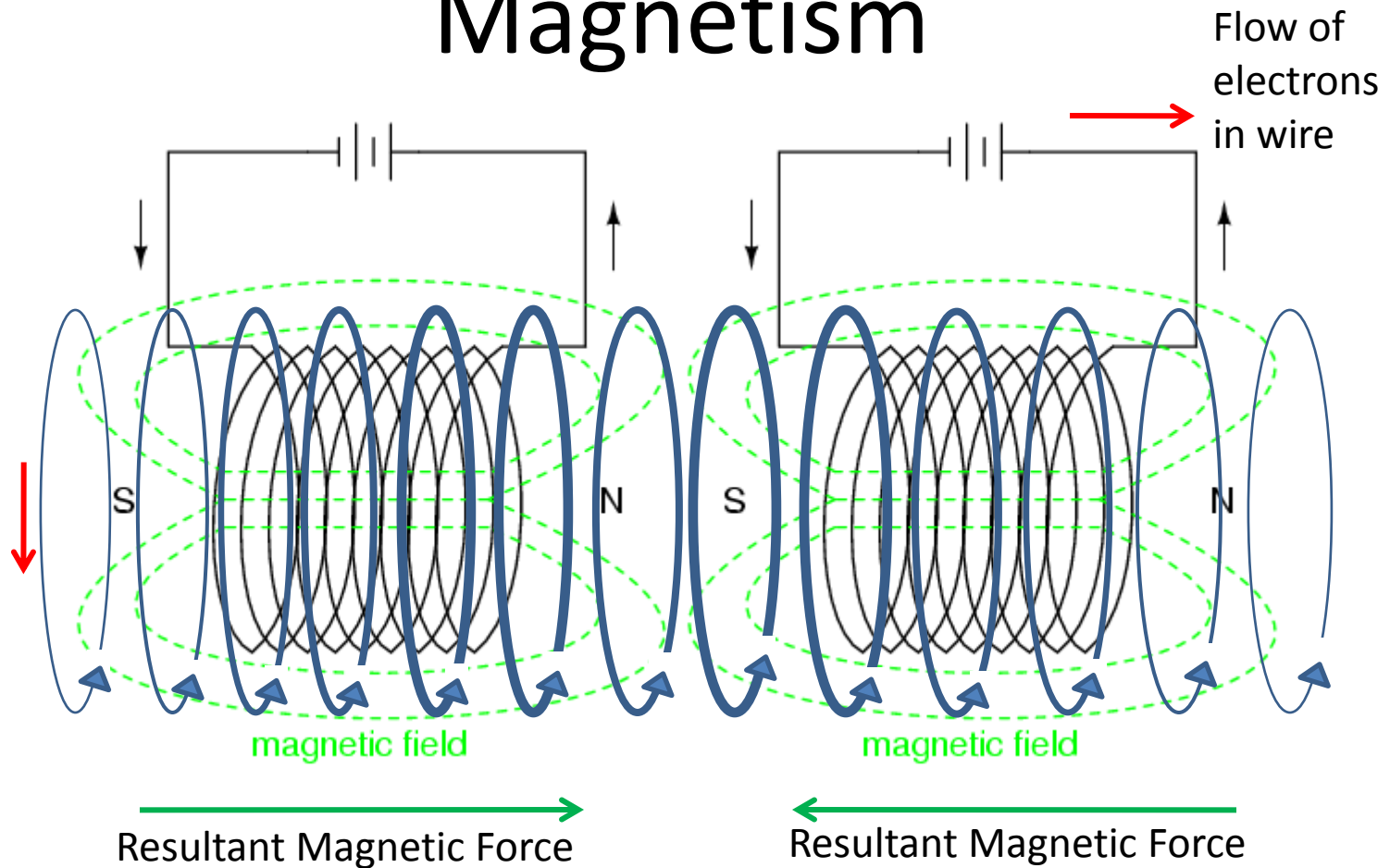
Electrons drag the medium
in the same direction.
The closer to the wire,
the stronger the medium
flows along with the electrons.



Medium flows faster between the
two wires because of the 'addition'

The magnetic force that
forces the two wires
towards each other is
caused by the
Bernoulli effect
exercised by the
flowing medium.

Magnetism



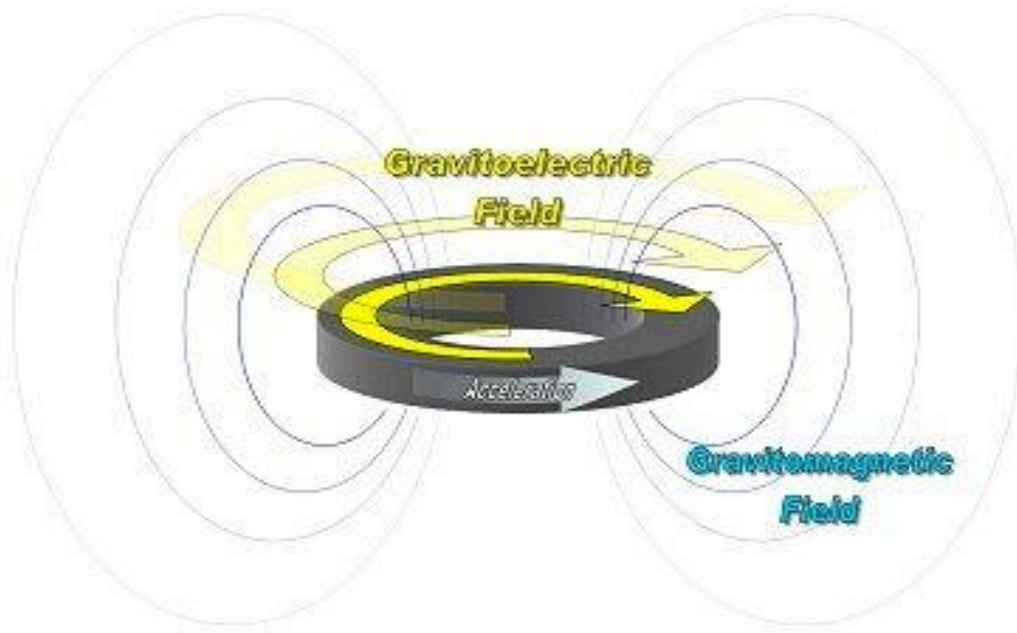
Medium rotates around the coils because of the drag caused by the electrons.
The medium between the two coils rotates faster because it is dragged by the electrons of both wires.
The coils are forced towards each other because of the Bernoulli effect. (Analogy: lift of frisbee)

Magnetism

Wikipedia:

The '**London moment**' is a [quantum-mechanical phenomenon](#) whereby a [spinning superconductor](#) generates a [magnetic field](#) whose [axis](#) lines up exactly with the spin axis.

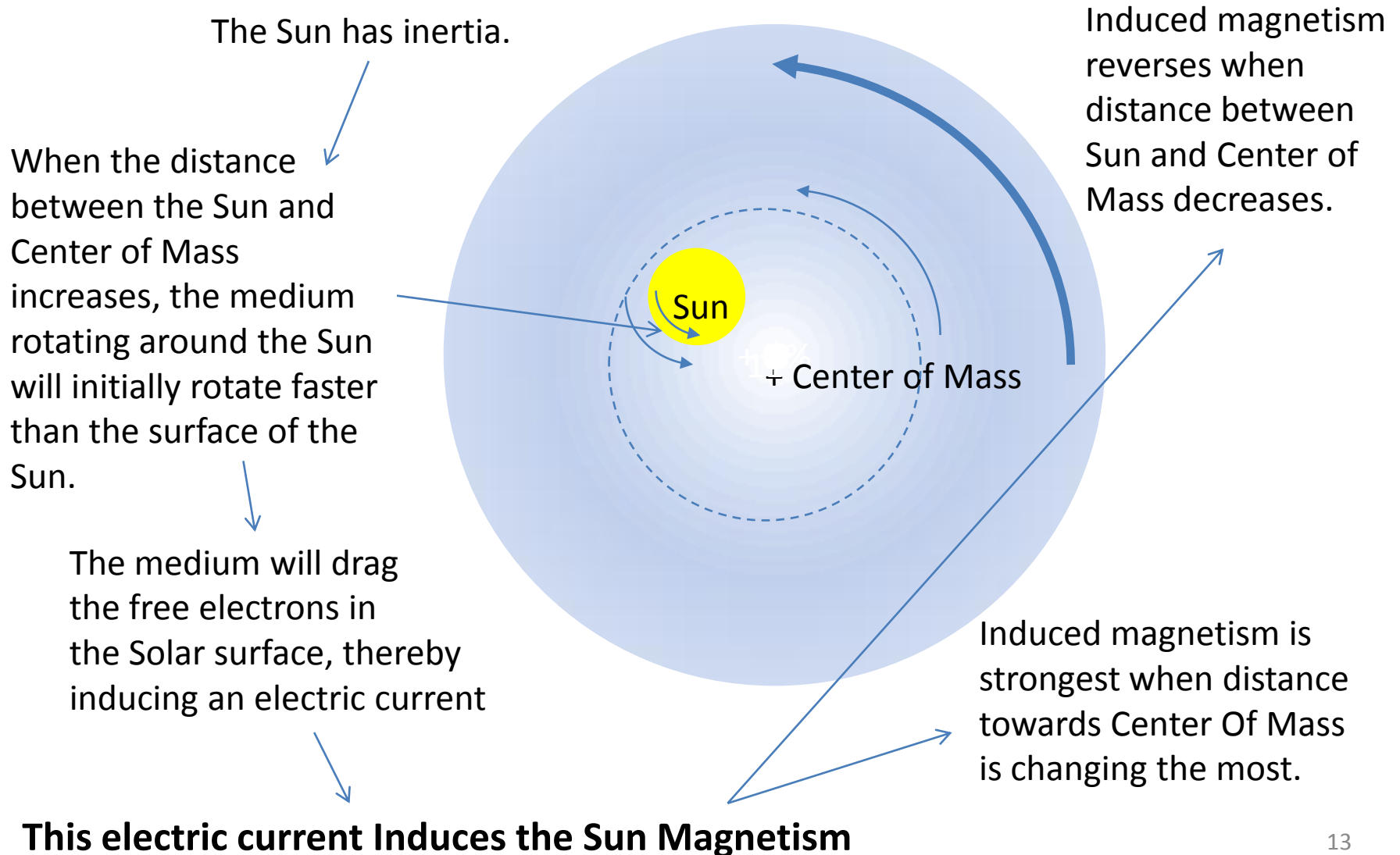
The term may also refer to the [magnetic moment](#) of any [rotation](#) of any [superconductor](#), caused by the [electrons](#) lagging behind the rotation of the object.



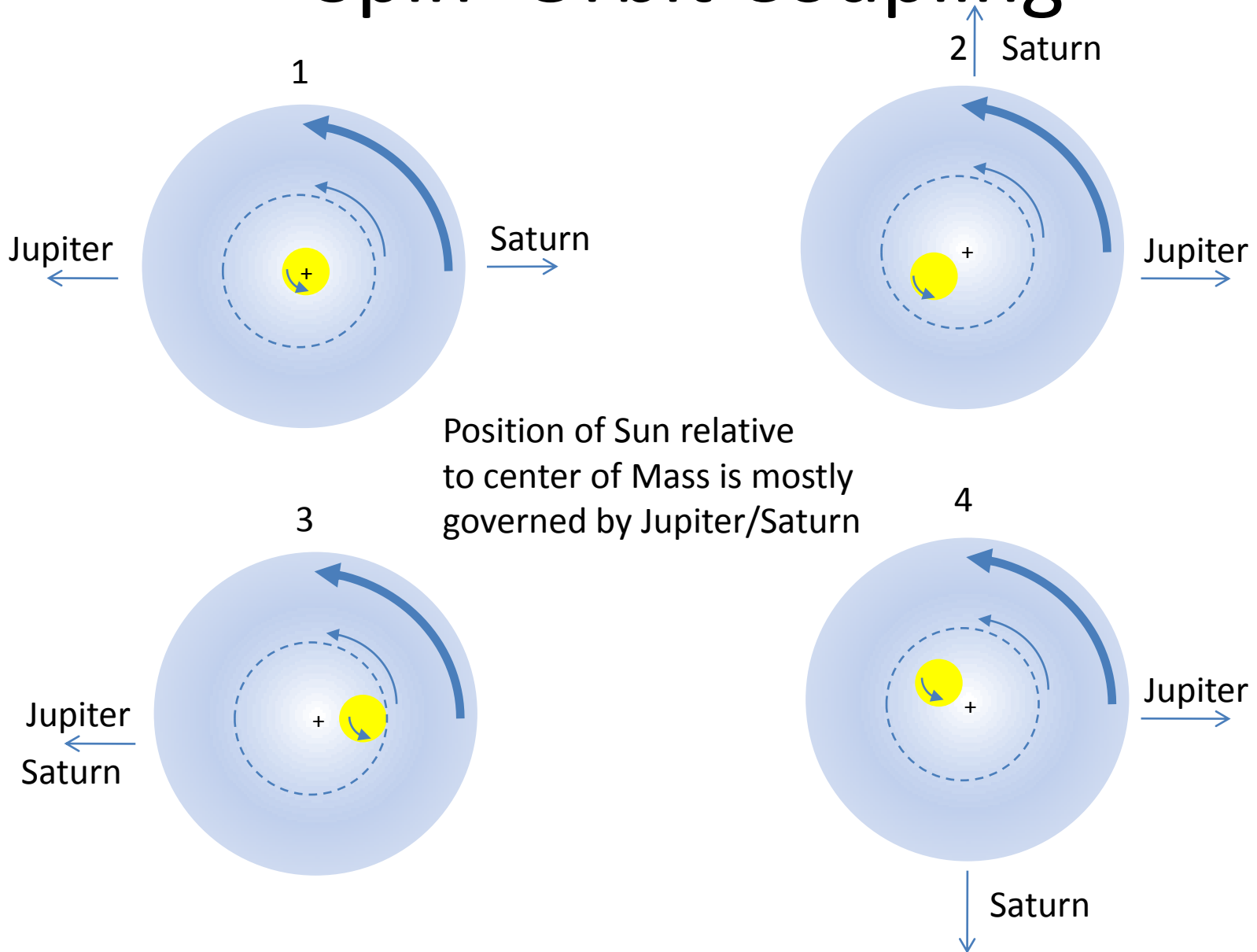
Electrons in the superconductor keep their position relative to the medium surrounding the superconductor and thereby induce an electric current in the superconductor.

Hypothesis: this effect is not limited to superconductors, but is just less pronounced in other conductors.

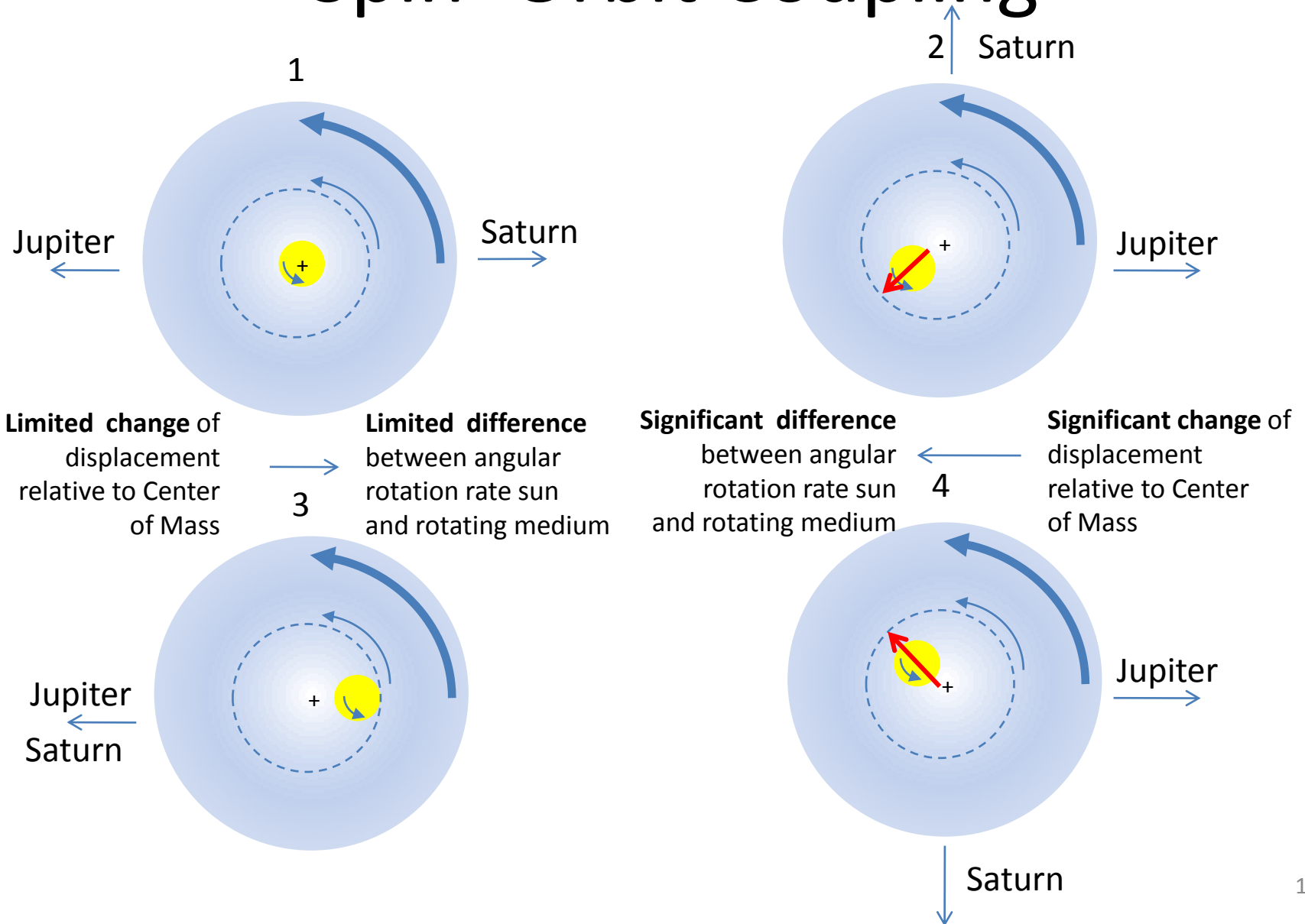
Magnetism



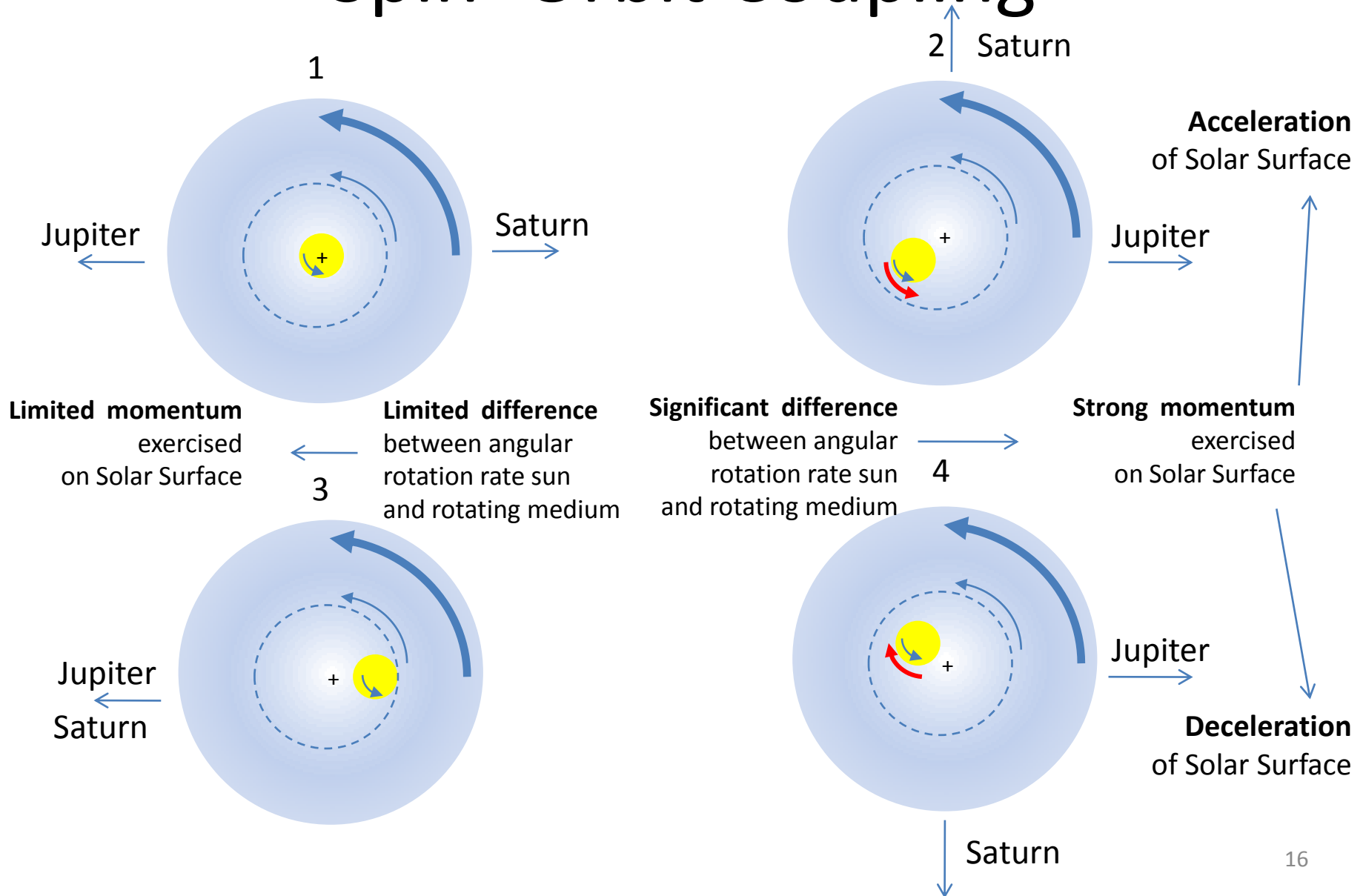
Spin–Orbit Coupling



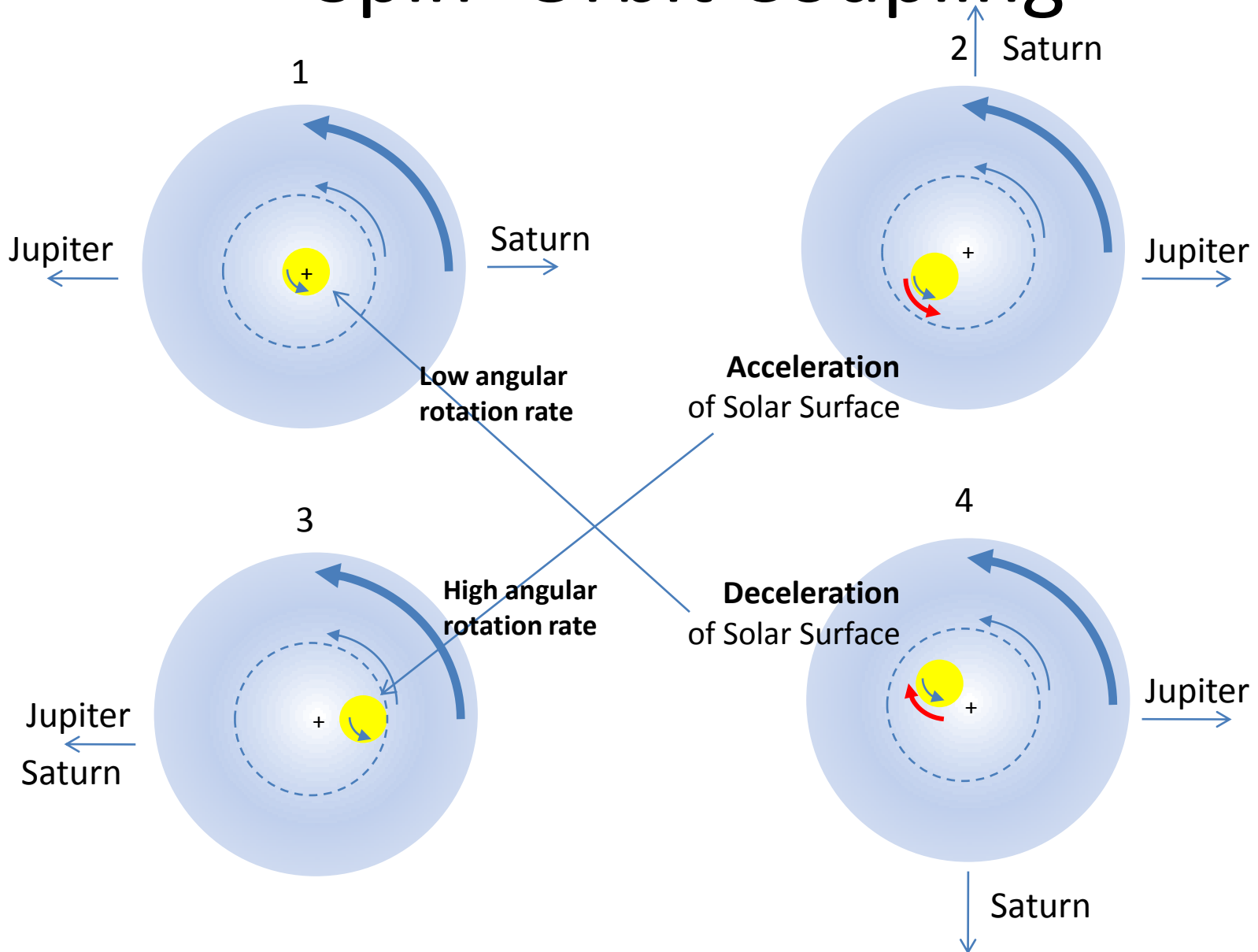
Spin–Orbit Coupling



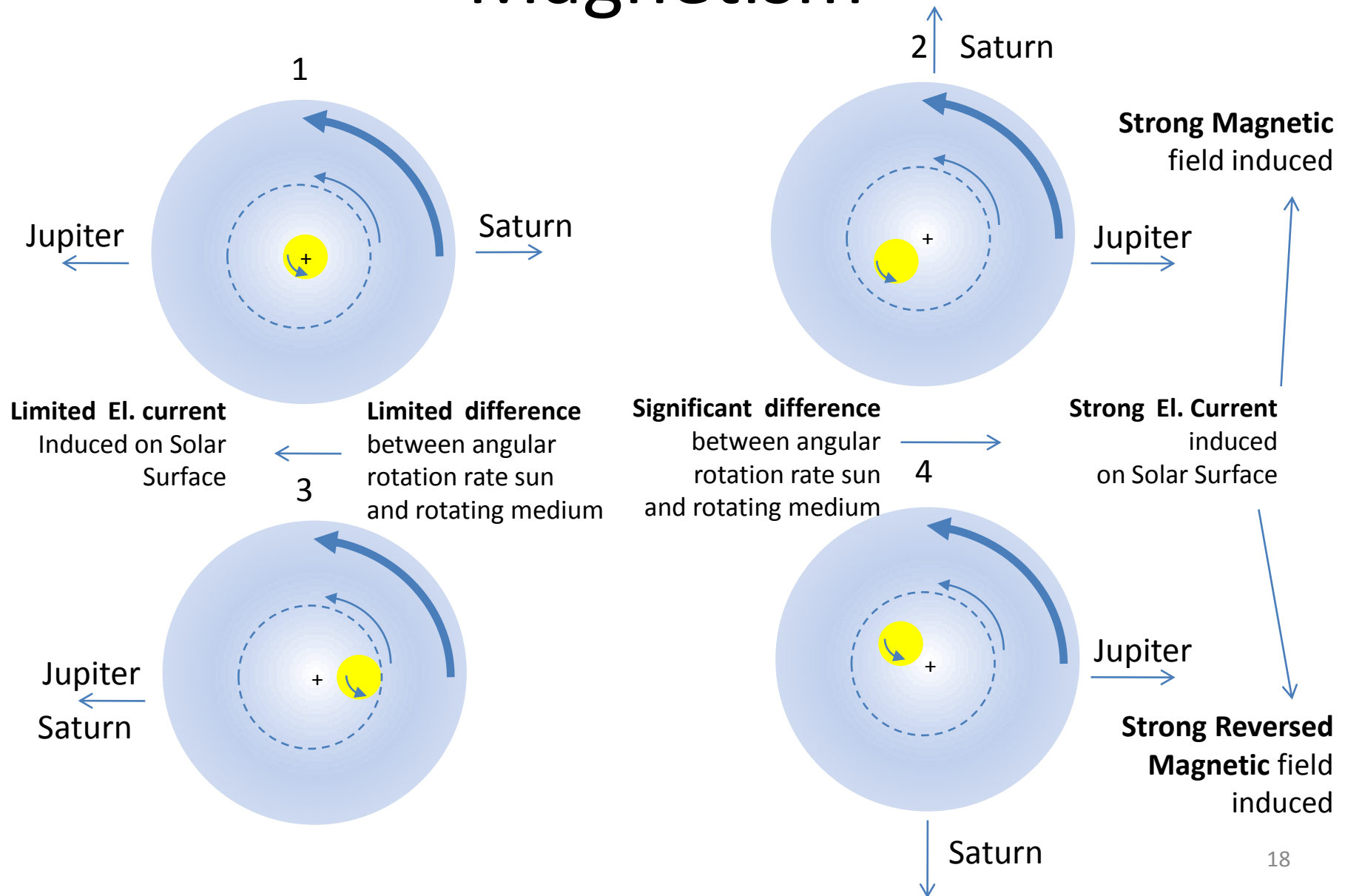
Spin–Orbit Coupling



Spin–Orbit Coupling



Magnetism



Summary

- The Rotating Medium Model explains why changes in the Sun's rotation rate are synchronized with changes in its orbital motion about the barycentre of the Solar System.
- The model explains how the relatively weak planetary forces on the Sun are 'indirectly' able to influence the solar activity on the surface of the Sun: the planets 'force' the Sun into a zone of increased medium flow.
- The Model for Magnetism explains how the Sun Magnetism (causing the sun spots) is induced by the Rotating Medium.
- Solar Cycle is governed by position of Sun relative to Rotating Medium which is in turn is determined by the relative positions of the planets.