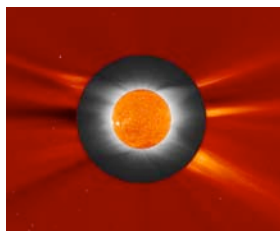


3/29/06

Test 3, Chapters 7, 8, (parts of) 9 next Friday

News:

Pic of the day; Solar eclipse,
corona, start of solar wind.



Invert balloon - 2 D embedding diagram of curved 3 D space around
gravitating object

Properties of this curved space that are preserved in the embedding
diagram:

$$C < 2\pi r$$

Sum of angles of triangle not equal 180° (can be $>$ or $<$)

Parallel lines diverge or cross

Orbit - circle around "cone"

Moon is going as straight as it can in curved space around the
Earth

This is how gravity works for Einstein - no Newtonian Force -

Gravitating objects curve the space around them - nearby objects
move in that curved space

*The parallel-propagated straight lines of their force-free motion
are warped by the curved space.*

Embedding diagram:

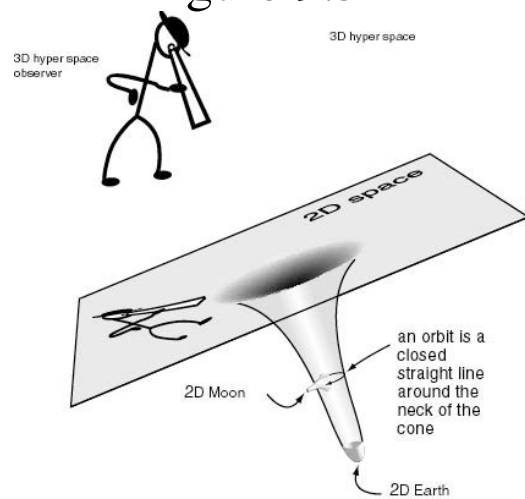
Real Space \rightarrow Embedding Diagram Space

Volume (3D) \rightarrow Surface (2D)

Surface (2D) \rightarrow Line (1D)

Line (1D) \rightarrow Point (0D)

Figure 9.5



Orbits in curved 2D embedding diagram of gravitating space