

20231118 - Dissecting "Conic Sections"; a collage by Mark Sanders – after a poem by Sarah Glaz.

Conic sections

*I watched my youngest son,
Apollonius,
lift the cone in his left hand —*

The packaging from a stacking rings toy features twice in this collage, top and bottom right. The poet tells us, "It was one of my son's favorite toys when he was about 2 or 3, and watching my grandson play with it one day made me write this poem".

*a luminous presence,
a gift from the gods.*

Little of Apollonius is known, beyond the limited amount of his work left behind him. The 6th century CE mathematician Eutocius of Ascalon wrote about Apollonius, telling us that he was born around 240BCE in Perga, the ruins of which now lie to the east of Antalya, Turkey. It is also known that Apollonius spent time studying in the library at Pergamum which was regarded, along with Alexandria, as being one of the most important libraries in the ancient world. The map section at the top of the collage includes these locations; also featuring images of the amphitheatres in ruin at both; Perga to the lower part of this map (Perga was a cultural centre and a place of worship of the goddess Artemis; by coincidence, the twin sister of the god Apollo, the near namesake of The Great Geometer! She is pictured in the commemorative postage stamp affixed to the Perga amphitheatre image. Pergamum to the top left of the collage.

His time spent studying the work of Euclid and Archimedes in Alexandria is represented in a second map section, at the bottom of the collage, with the city itself in the bottom left corner, including a view out over the harbour.

*His right hand held the plane
cutting the cone
at a slant.*

*Conic sections revealed
their glorious curves
one by one:*

*First came
a circle,
then*

*an ellipse,
afterwards
a parabola*

and a hyperbola appeared.

The image of the stacking ring toy bottom right has been segmented in the manner prescribed by Apollonius's studies.

All four from one! he exclaimed.

*Since we are Greek,
he could prove or disprove.*

*And when he grew up —
he did.*

Although little recorded remains of the work of Apollonius, 7 of his 8 books of "Conics" are known. The fractures between the various images in the collage perhaps reference the missing eighth volume and the paucity of any other material evidence of his work.

It is known that he developed an improved sundial, the Hemicyclium, which having the hour lines drawn on the surface of a conic section yielded greater accuracy. An image of a hemicycle sundial is included in the collage to the left hand side, with the sun emerging from behind. It is worth noting that the amphitheatre structures above, mirror the shape of the hemicyclium.