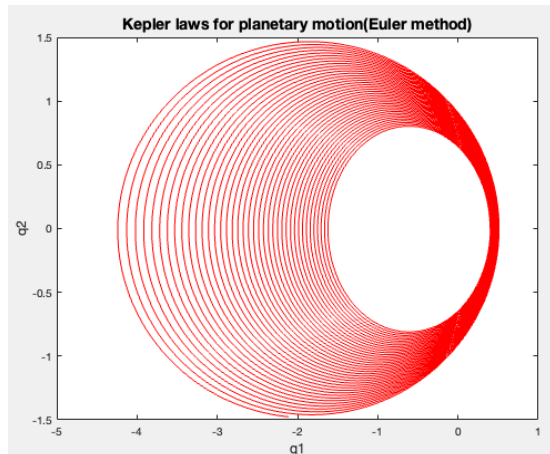
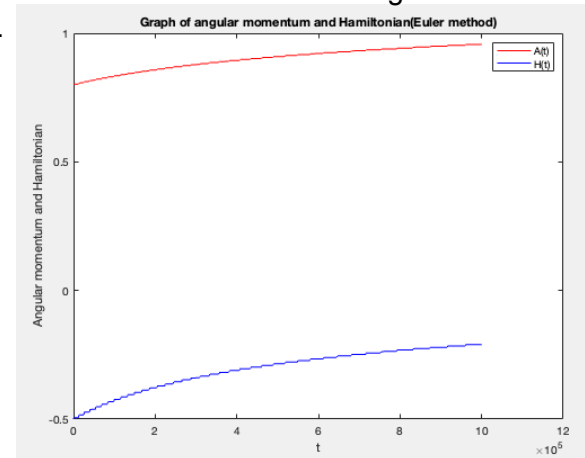


1] We can see from the graph that the approximate position is moving in an ellipse pattern, but it is not a perfect elliptic, and one side of the elliptic is drifting further and further away. This is obviously not the genuine planetary motion in the real world, therefore there is inaccuracy by simply utilizing Euler's approach, and it is insufficiently precise. Because the following step of position is decided by the previous step, the error accumulates and grows larger and larger. As a result, it is insufficiently robust.



2] The graph shows that the angular momentum and Hamiltonian are not conserved; when t increases, the $H(t)$ and $A(t)$ also increase significantly. We may remark that because the change is larger than before, there are more mistakes as t grows larger.



3] This time, the planetary motion is completely elliptical. Furthermore, the angular momentum and Hamiltonian are now conserved to a constant. We were able to obtain $A(t)=0.800$ and $H(t)=-0.500$. This suggests that Standard Euler's approach is more accurate and resilient than Euler's method in this case.

