Explanation of the program.

When a space object enters the field of gravity of a planet, the direction of the movement of the object will change due to the gravity. Either the object will pass the planet but has changed its direction or the object will make a curve around the planet. The curve will be an ellipse or a circle which is special case of an ellipse (the two foci fall together). Probably you may assume that if only the situation of one planet and one space object is considered, and other space objects/planets are ignored, an object that does not make a curve around the planet, this object never will and just passes this planet. In the other case it makes already a curve (ellipse) around the planet how long the longest distance may be.

The program calculates, and shows, the curve of a space object, when it comes in the field of gravity of a planet. In the program the planets considered are the Sun and Earth. For objects the Earth, Mercurius, Moon and satellites can be chosen or objects with different characteristics can be filled in. For the calculation a number of input information is needed. Two kind of information could be used for the calculation:

1. With respect to the planet, the X and Y location and the velocity of the object in the X and Y direction are known. Possibly the mass of the space object as well, but if it is very small with respect to the mass of the planet it can be ignored.
2. With respect to the planet the shortest distance and the longest distance are known, or when only one distance is available the rotation time is needed. In this case a curve around the planet is assumed.