Calculating the actual speed of Kleo

In the student instructions document, they are asked to determine the speed of the asteroid in pixels per second. They can also determine the speed in m/s or km/s as an extension of the activity.

- Use INFORMATION to get the date and time from the first image and last image. Subtract them. Convert to seconds.

- ALIGN and STACK the images

- Use PLOTTER to measure the distance in arcsec.

- Get the distance to the asteroid from Stellarium in AU

The calculated velocity of the asteroid:

95.098 arcsecs/11,506 seconds = .0082650790891709

Distance of 216 Kleopatra on November 12, 2008: 1.518814 AU

1.518814 AU = 227,211,340 km

.0082650790891709 * 227,211,340 km = 1,877,920

1,877,920 NUMBER / 206,265 (astronomical constant) = about 9.1 km/sec