

# HAOTIČNA DIFUZIJA JUPITEROVIH TROJANACA

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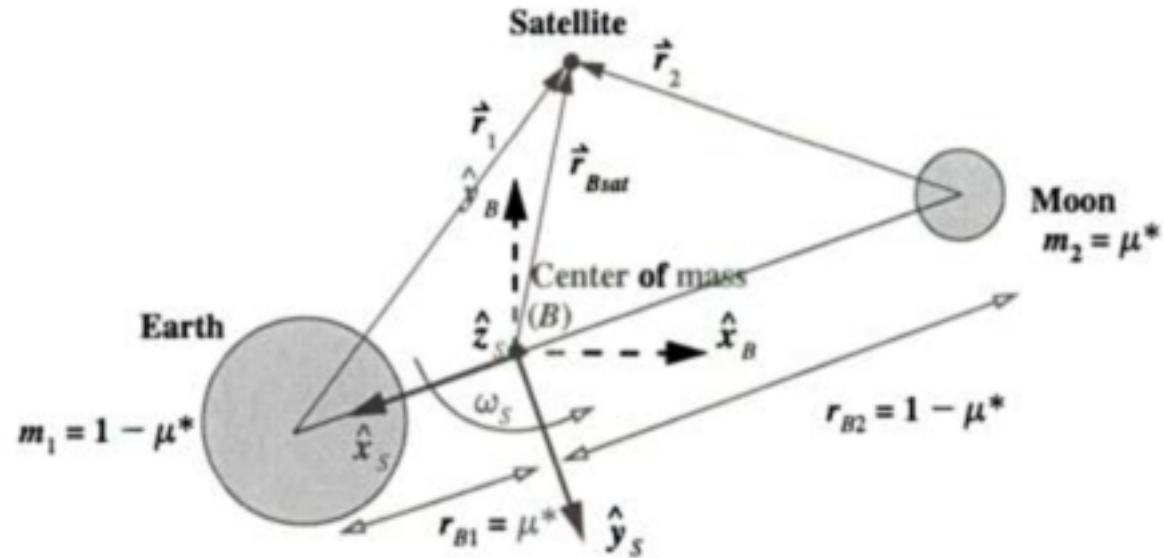
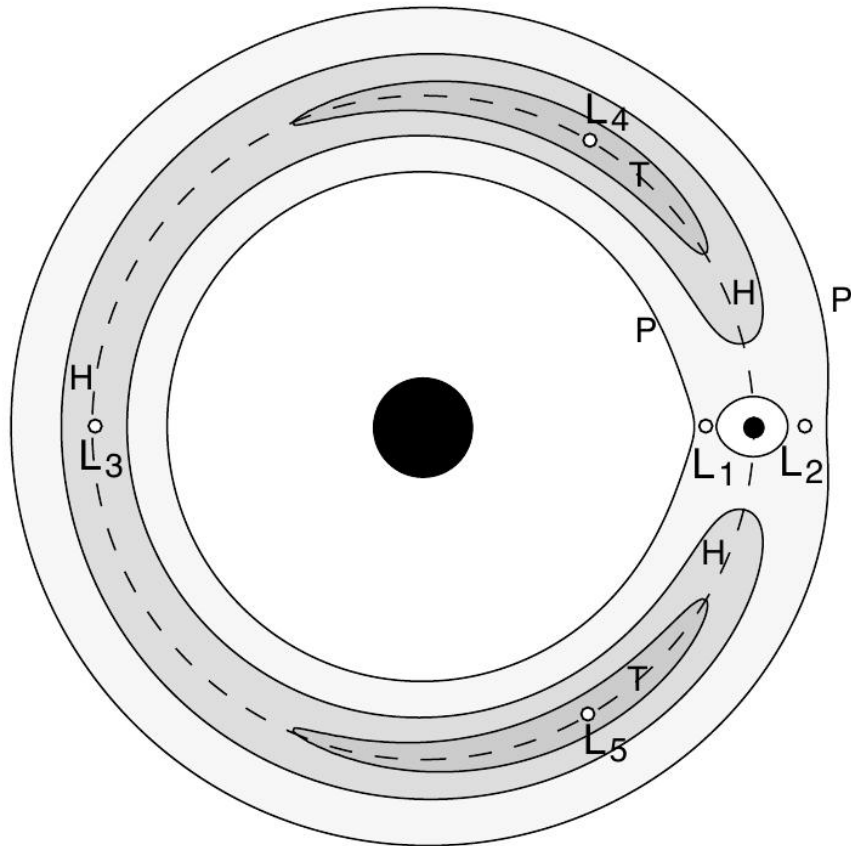
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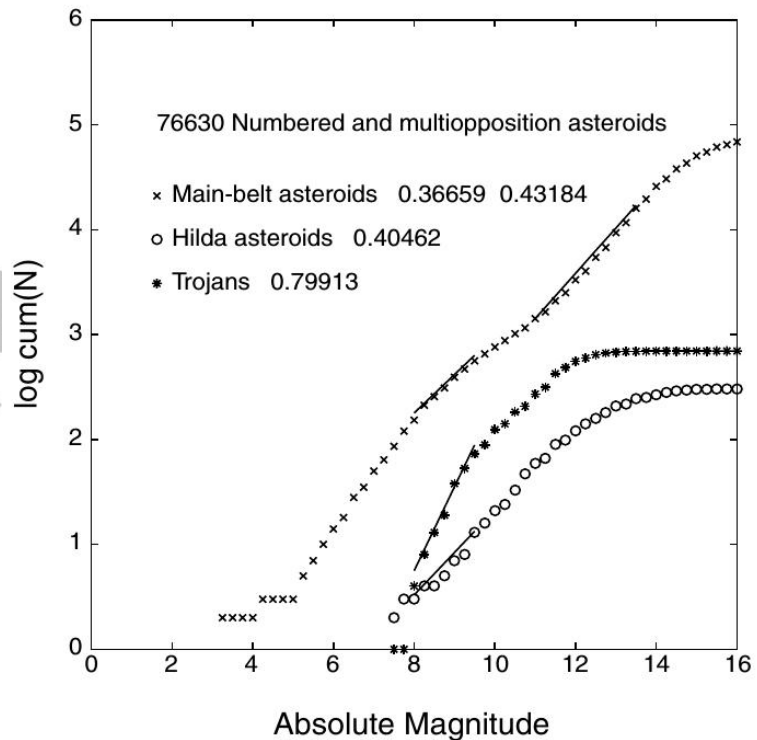
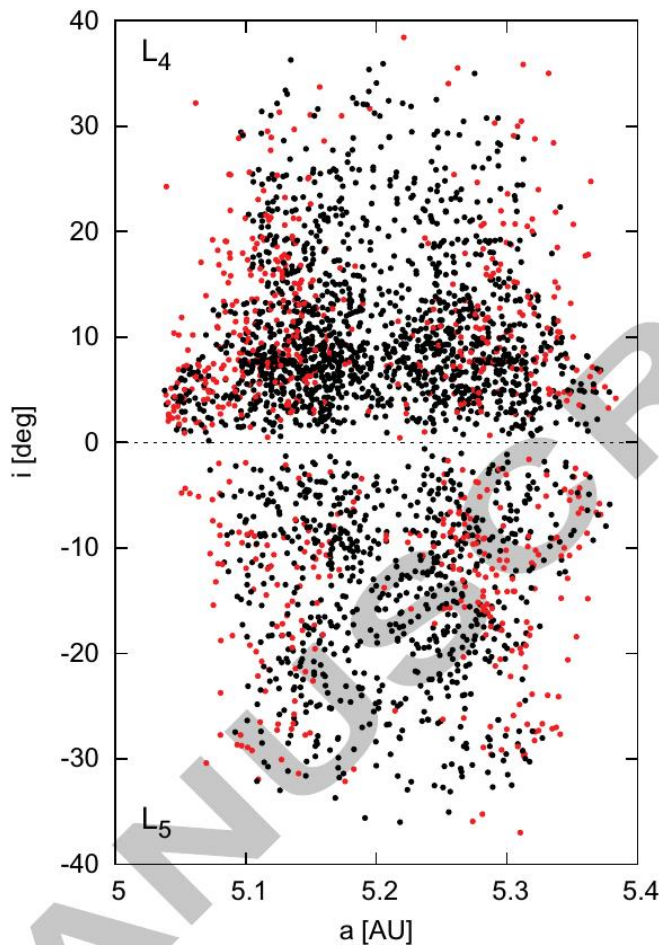
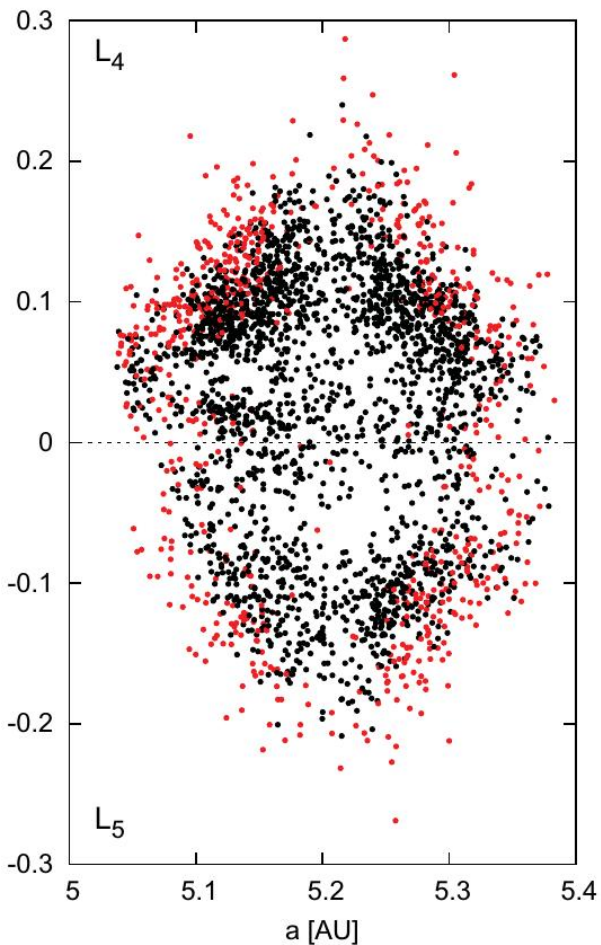
# Šta su Jupiterovi Trojanci?

- Rojevi asteroida u oblastima oko Jupiterovih Lagranževih tačaka  $L_4$  |  $L_5$
- Dinamika je specifična – 1:1 rezonanca sa Jupiterom (u srednjem kretanju)
- Pretpostavlja se da su ovi objekti planetezimali zarobljeni Jupiterom u njegovoj fazi rasta
- Dalja dinamička evolucija je samim tim prilično specifična – osnovni procesi su dinamička difuzija, niskoenergetski sudari, gravitacioni uticaji i haotični procesi, sve to u kombinaciji sa rezonancama

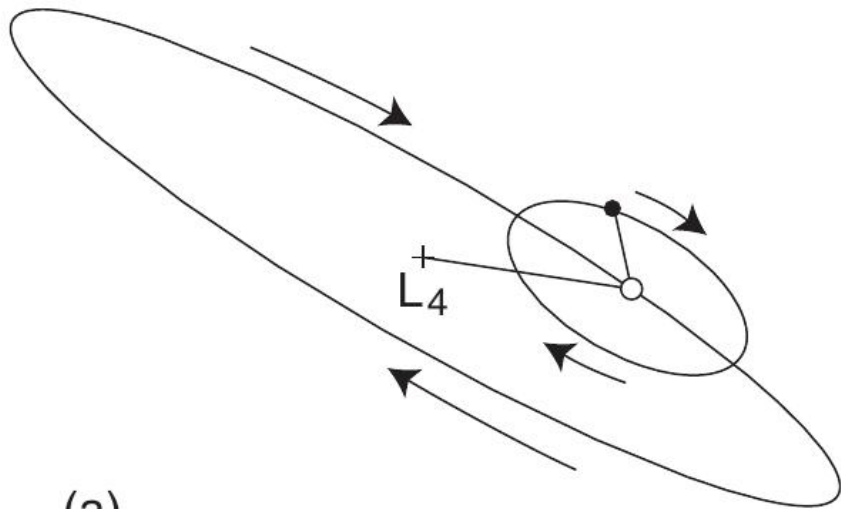
# Lagranževe tačke i problem tri tela



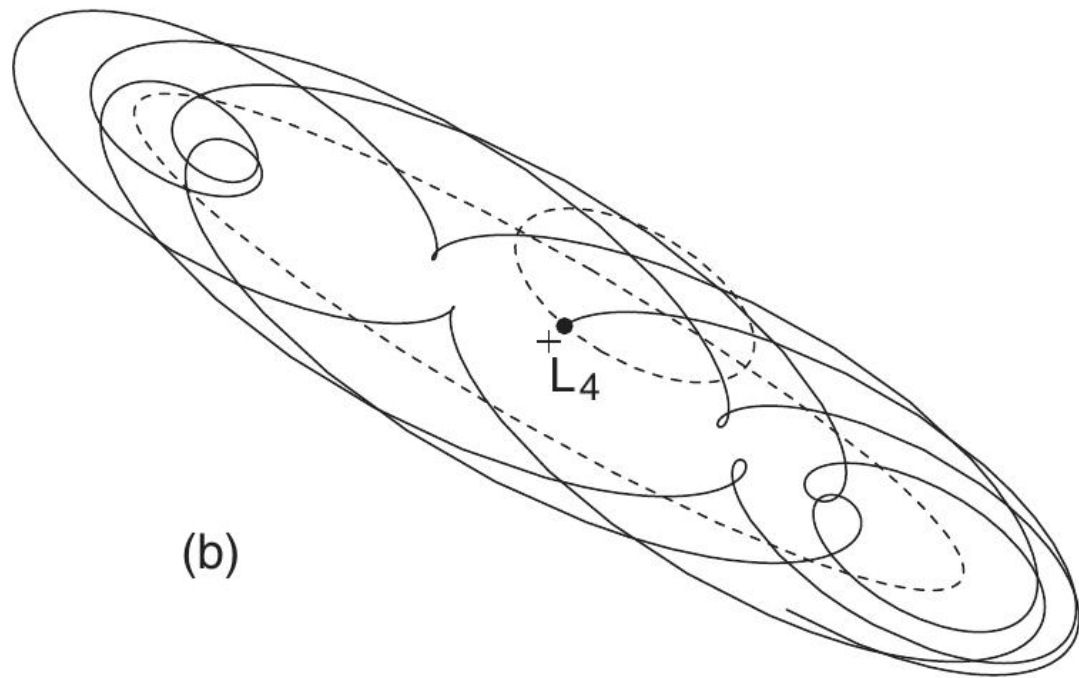
# Raspodela orbita + raspodela po veličini



# Kako se Jupiterovi Trojanci kreću?

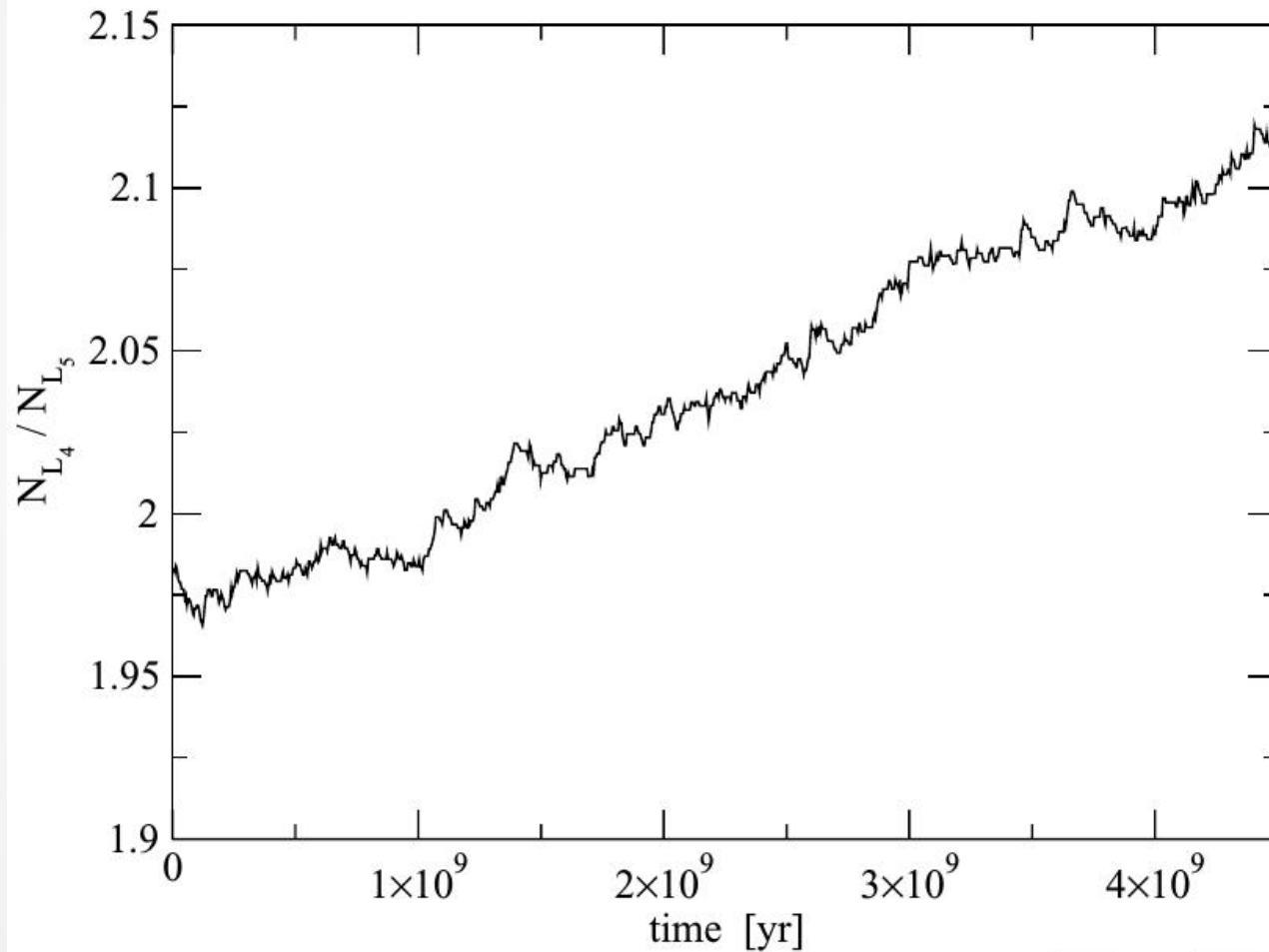


(a)



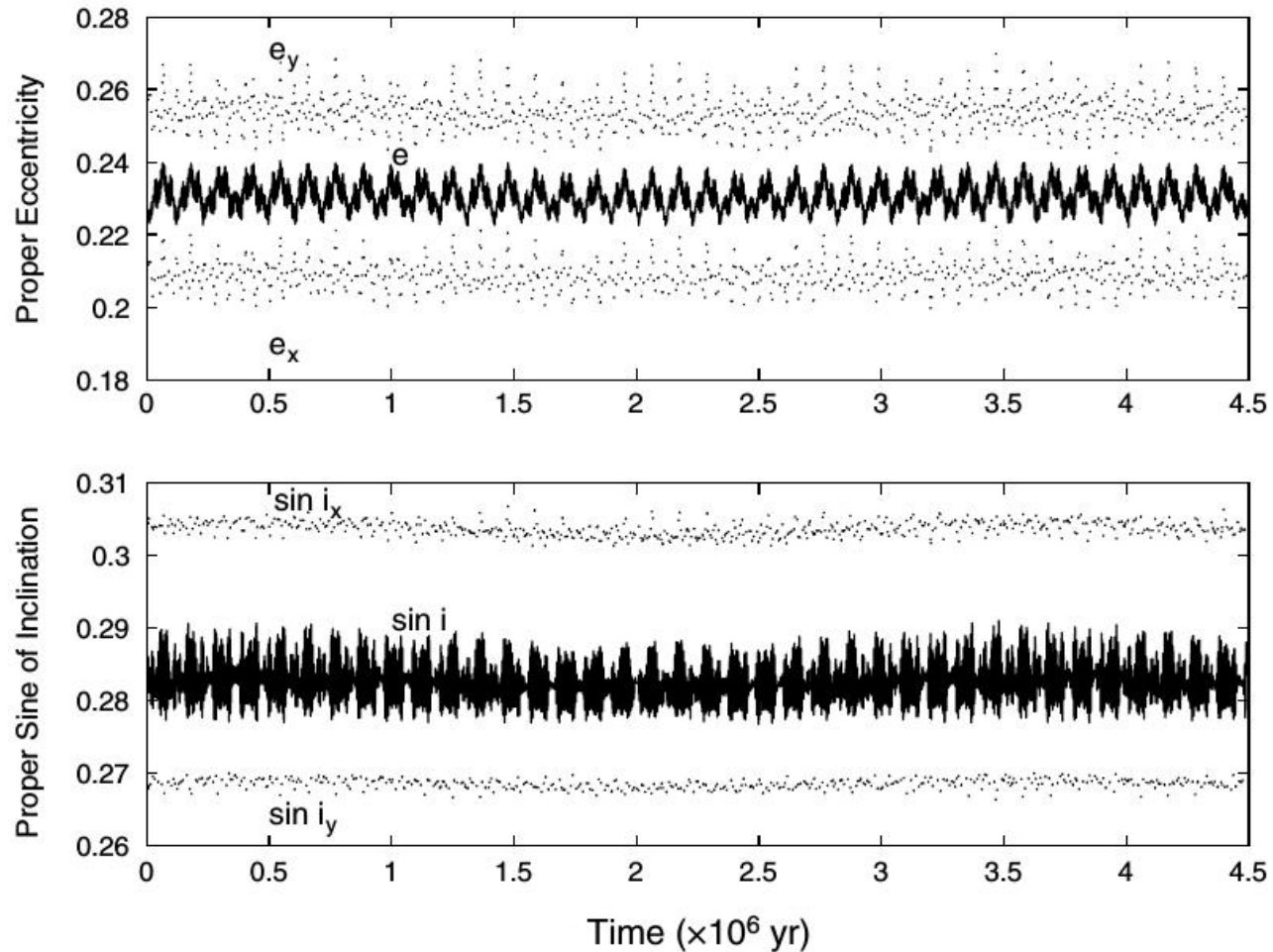
(b)

# Asimetrija: $L_4$ vs. $L_5$

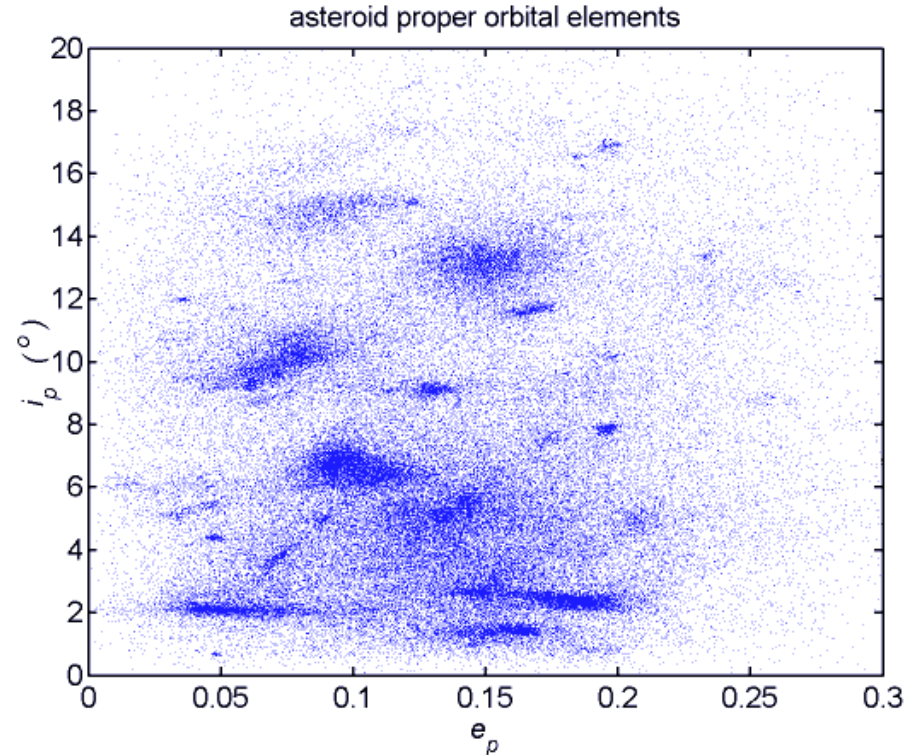
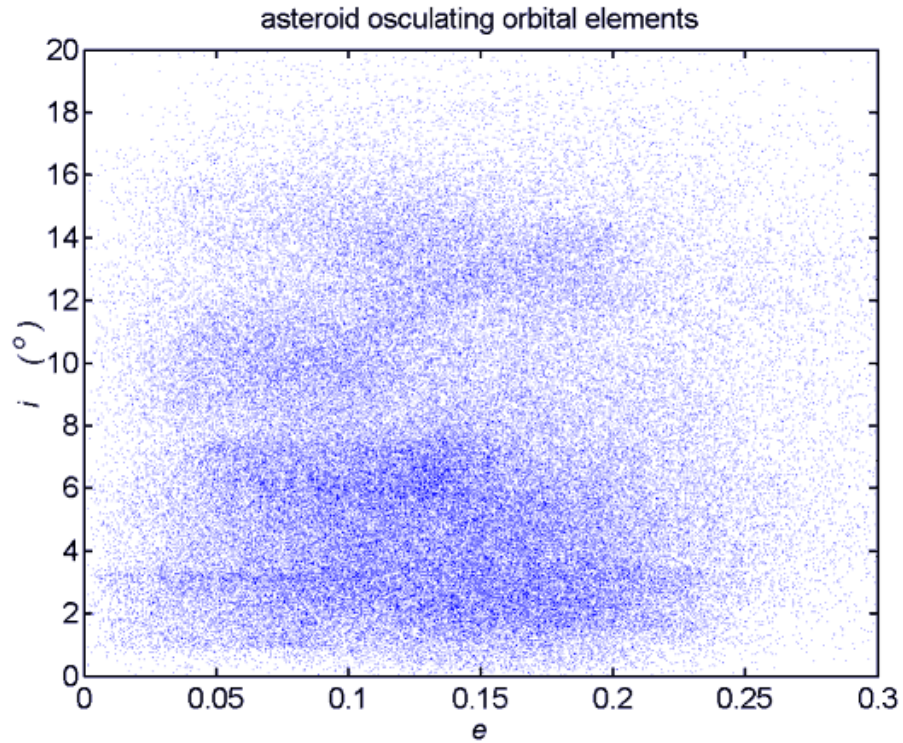




# Sopstveni elementi

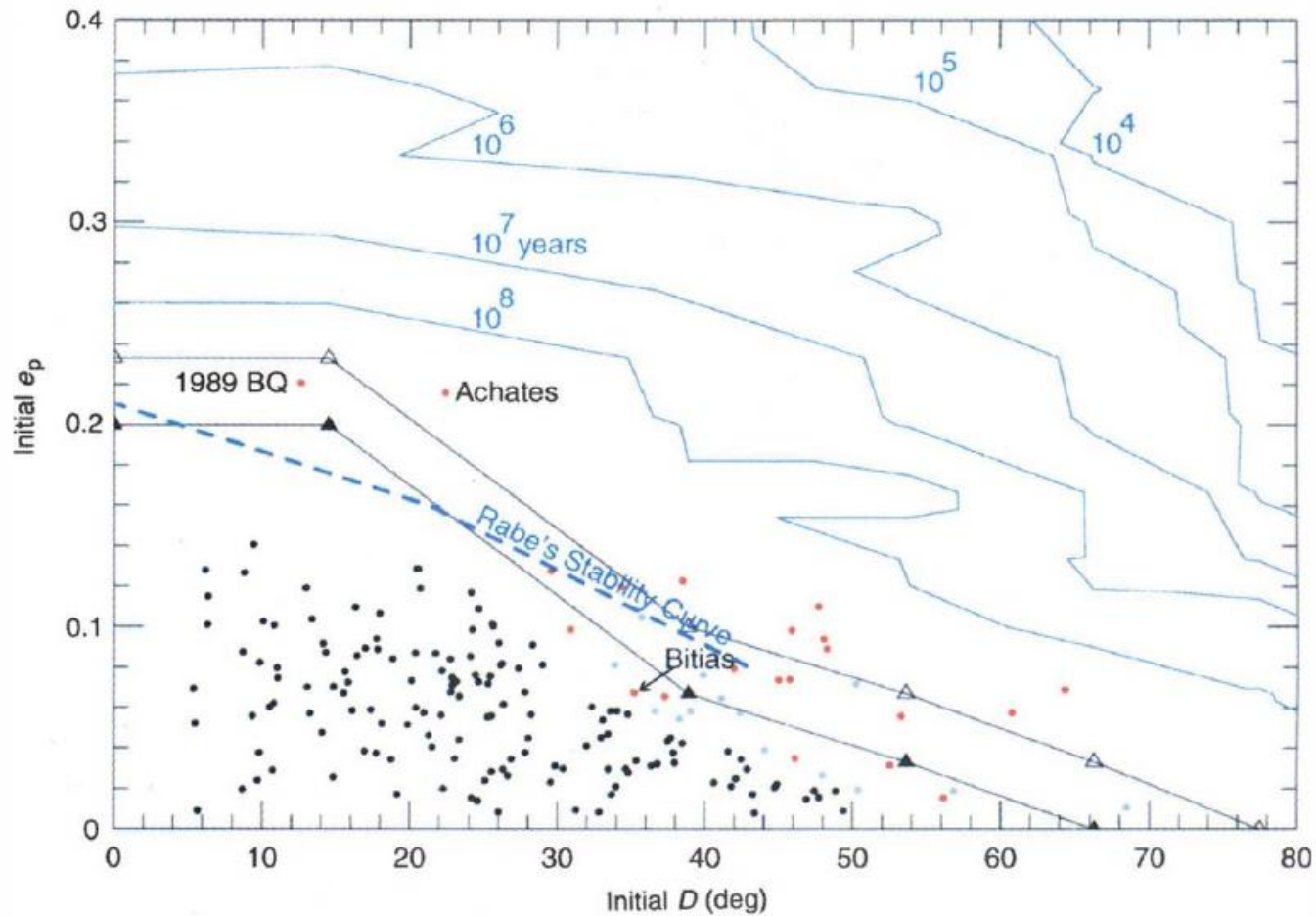


# Sopstveni elementi i familije asteroida





# Stabilnost

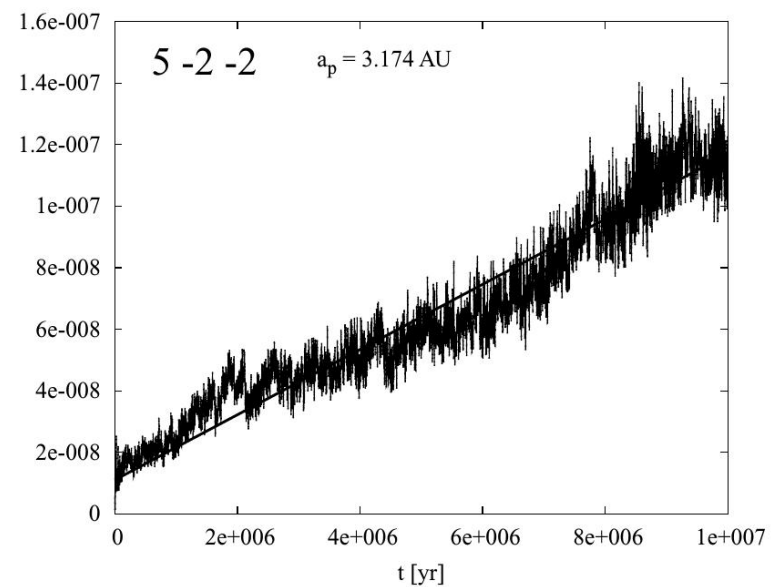


# Haotična difuzija

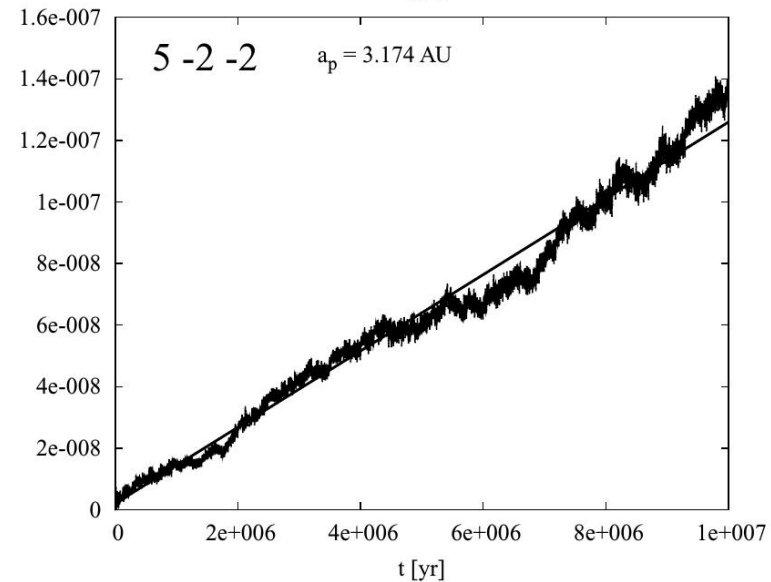
$$J_1 \sim \frac{1}{2} \sqrt{\frac{a_p}{a_J}} e_p^2$$

$$J_2 \sim \frac{1}{2} \sqrt{\frac{a_p}{a_J}} \sin^2 I_p$$

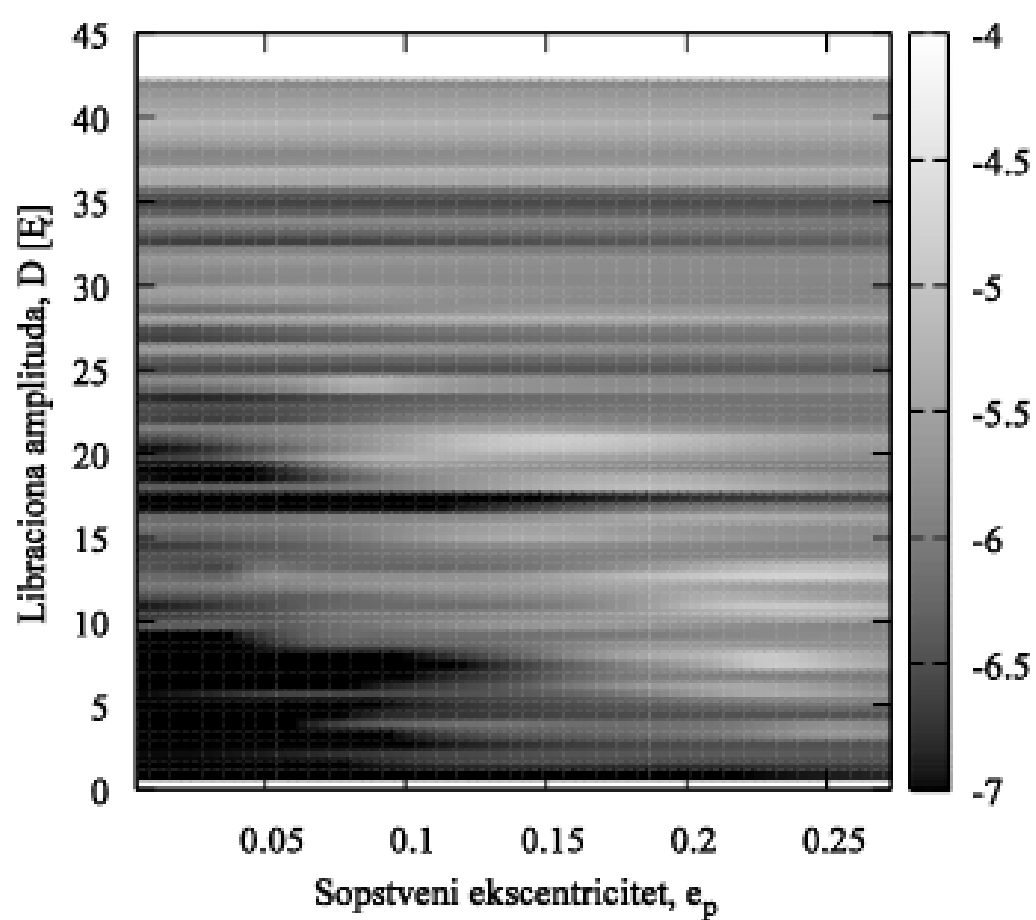
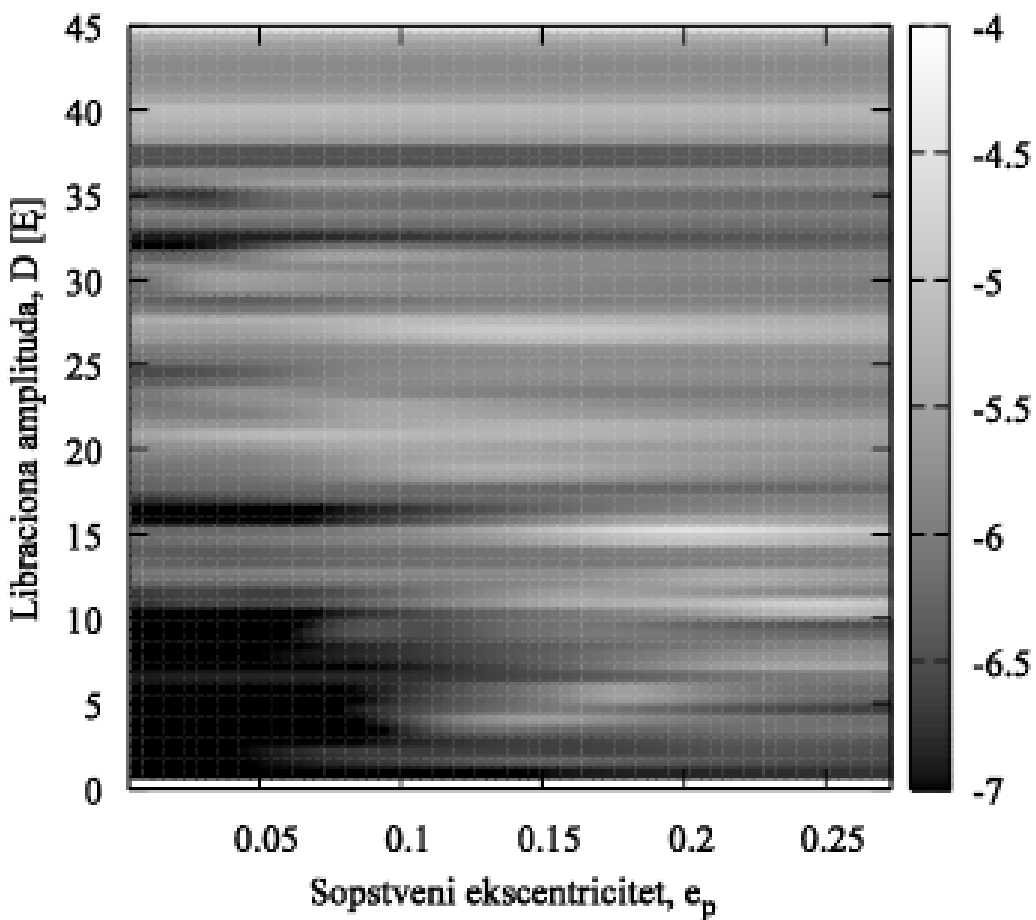
$\langle(\Delta J_1)^2\rangle$



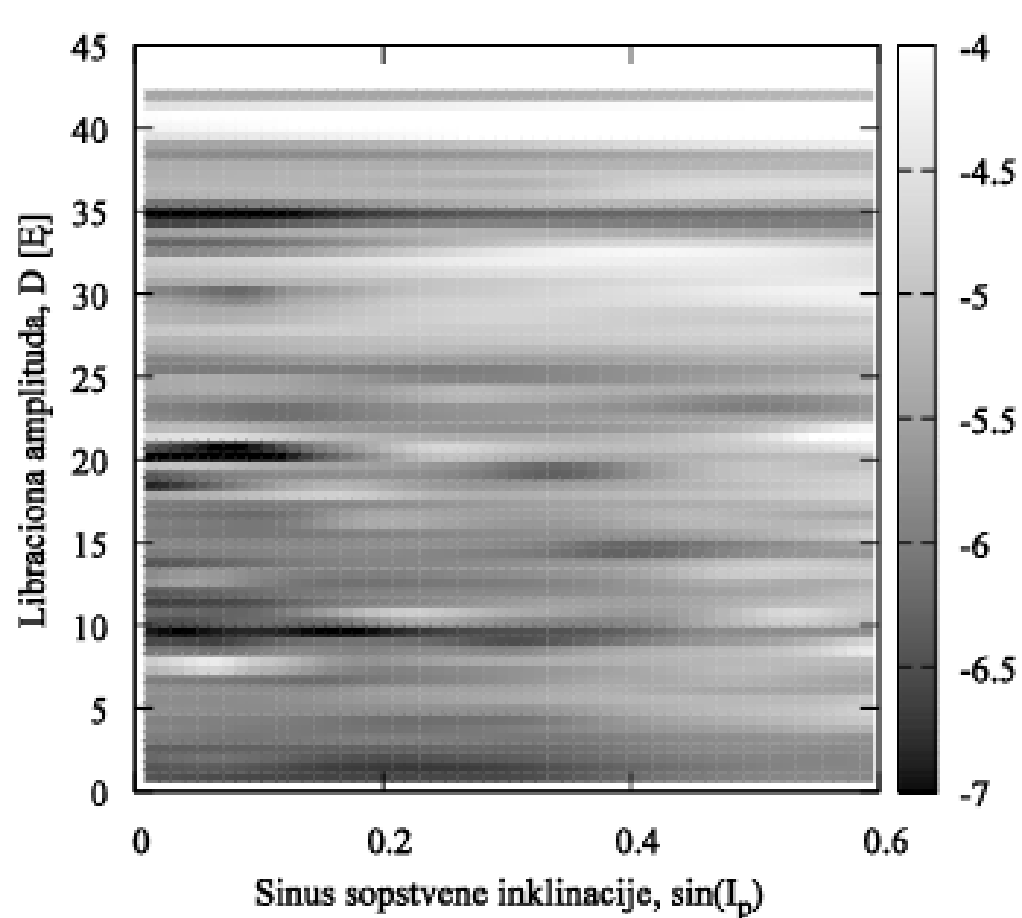
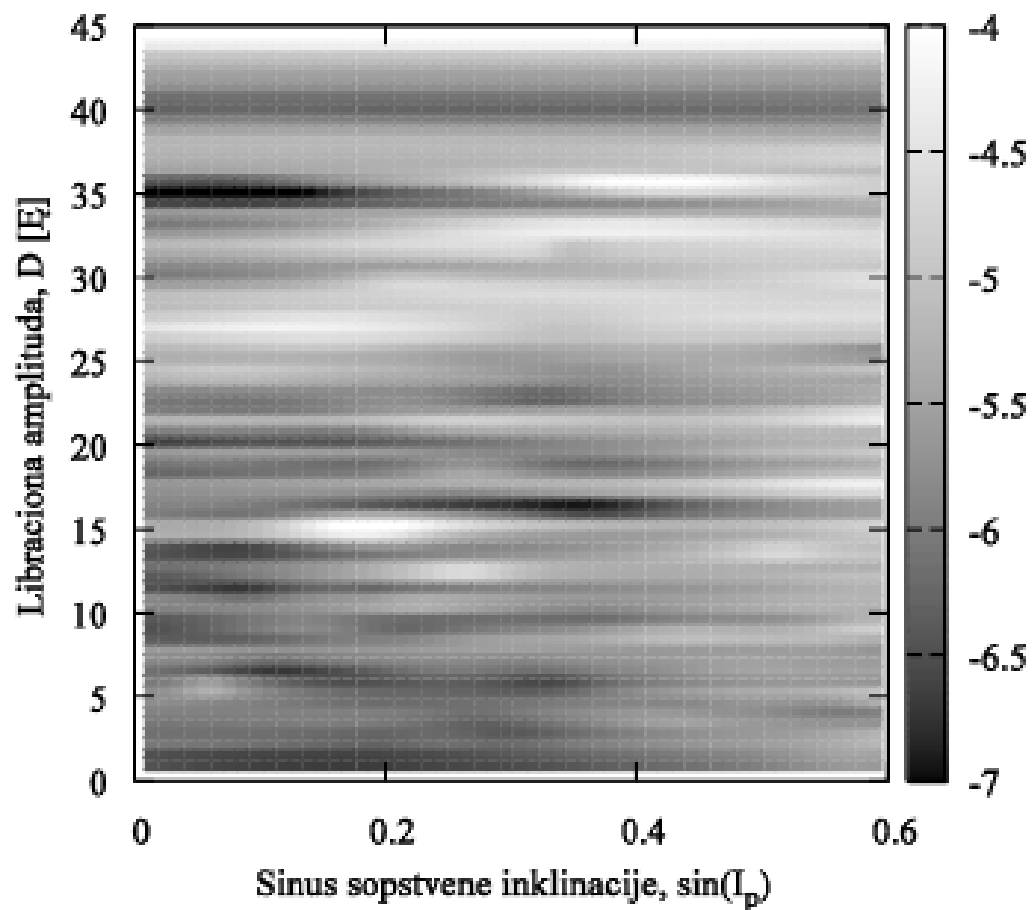
$\langle(\Delta J_2)^2\rangle$



# Gravitacija vs. haotična difuzija



# Gravitacija vs. haotična difuzija



HVALA NA PAŽNJI!