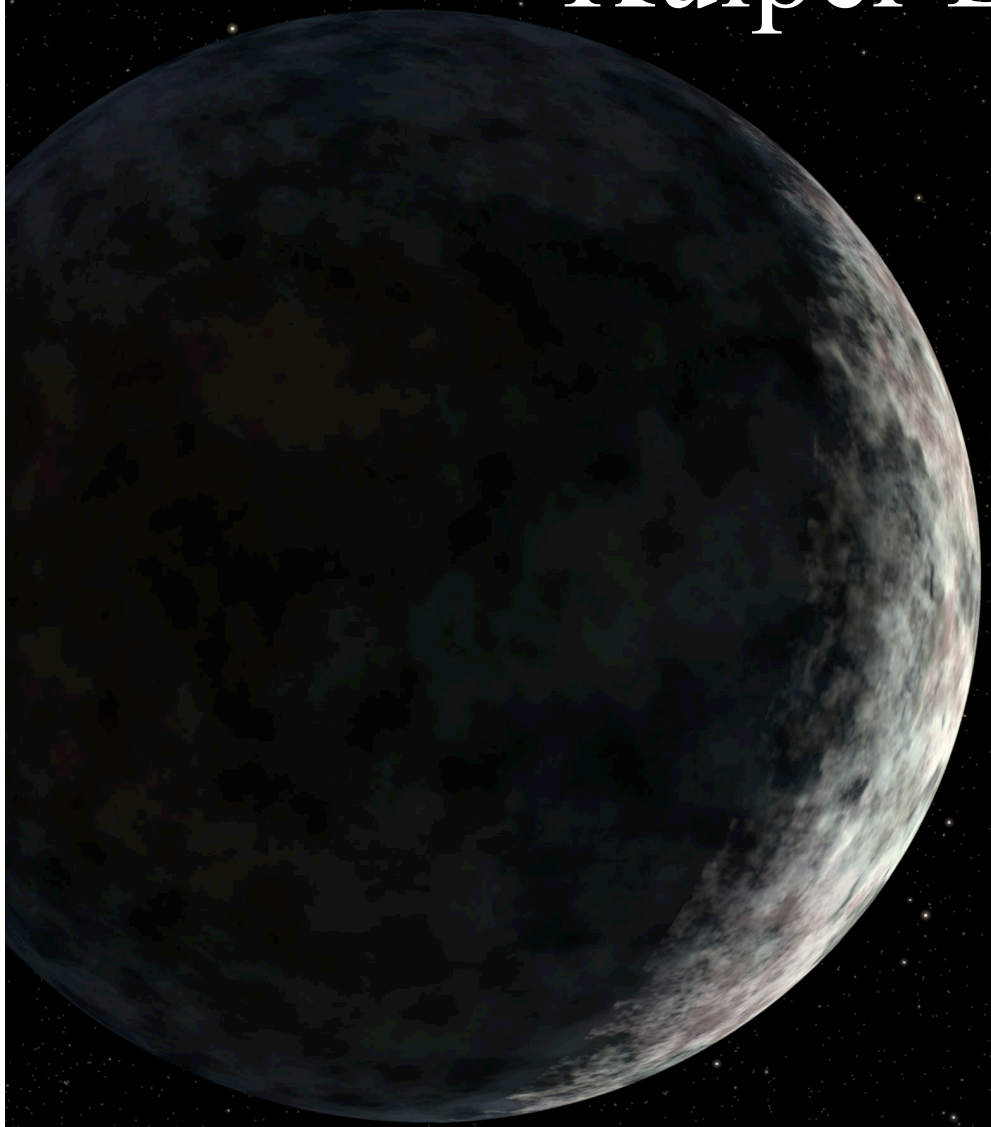
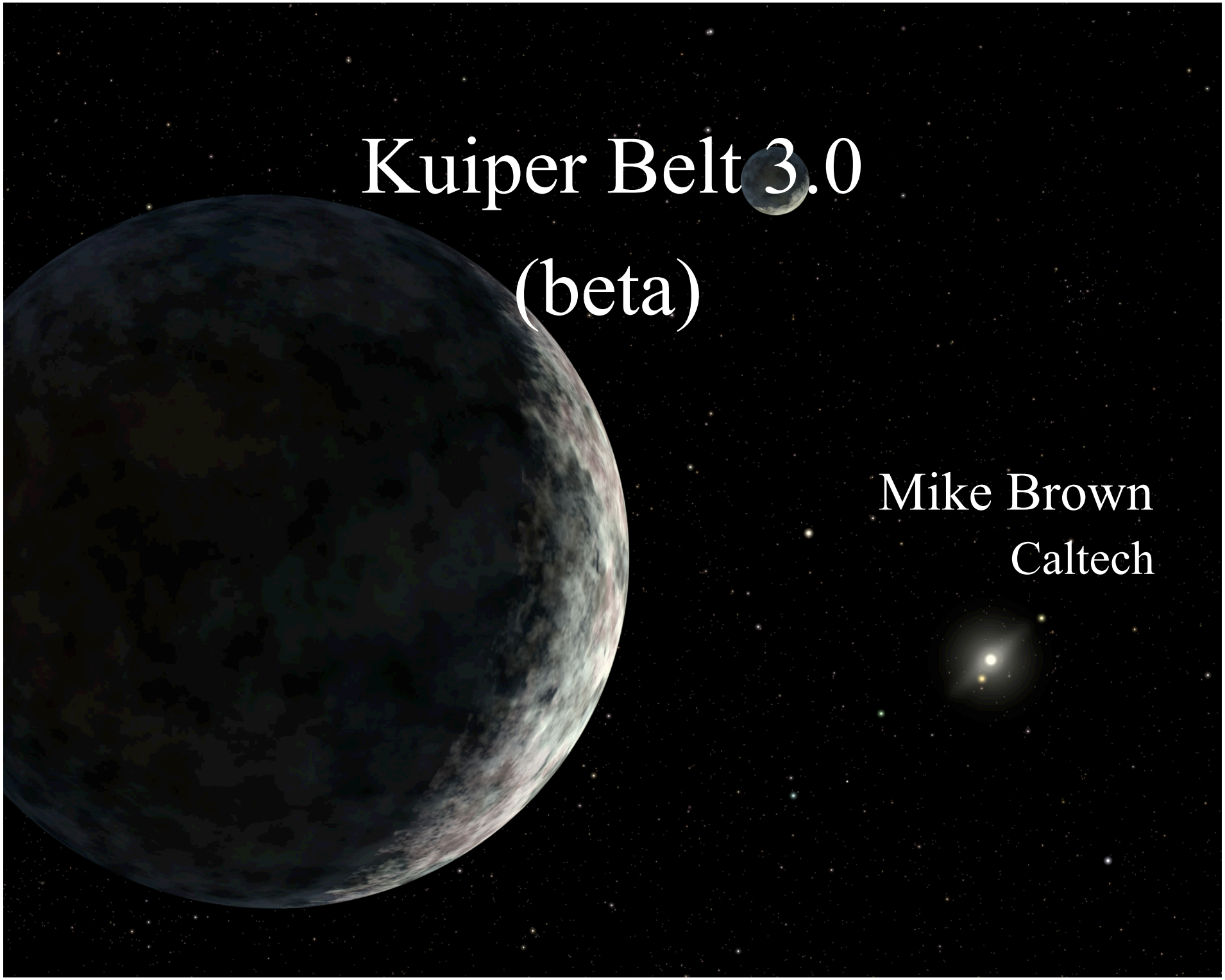
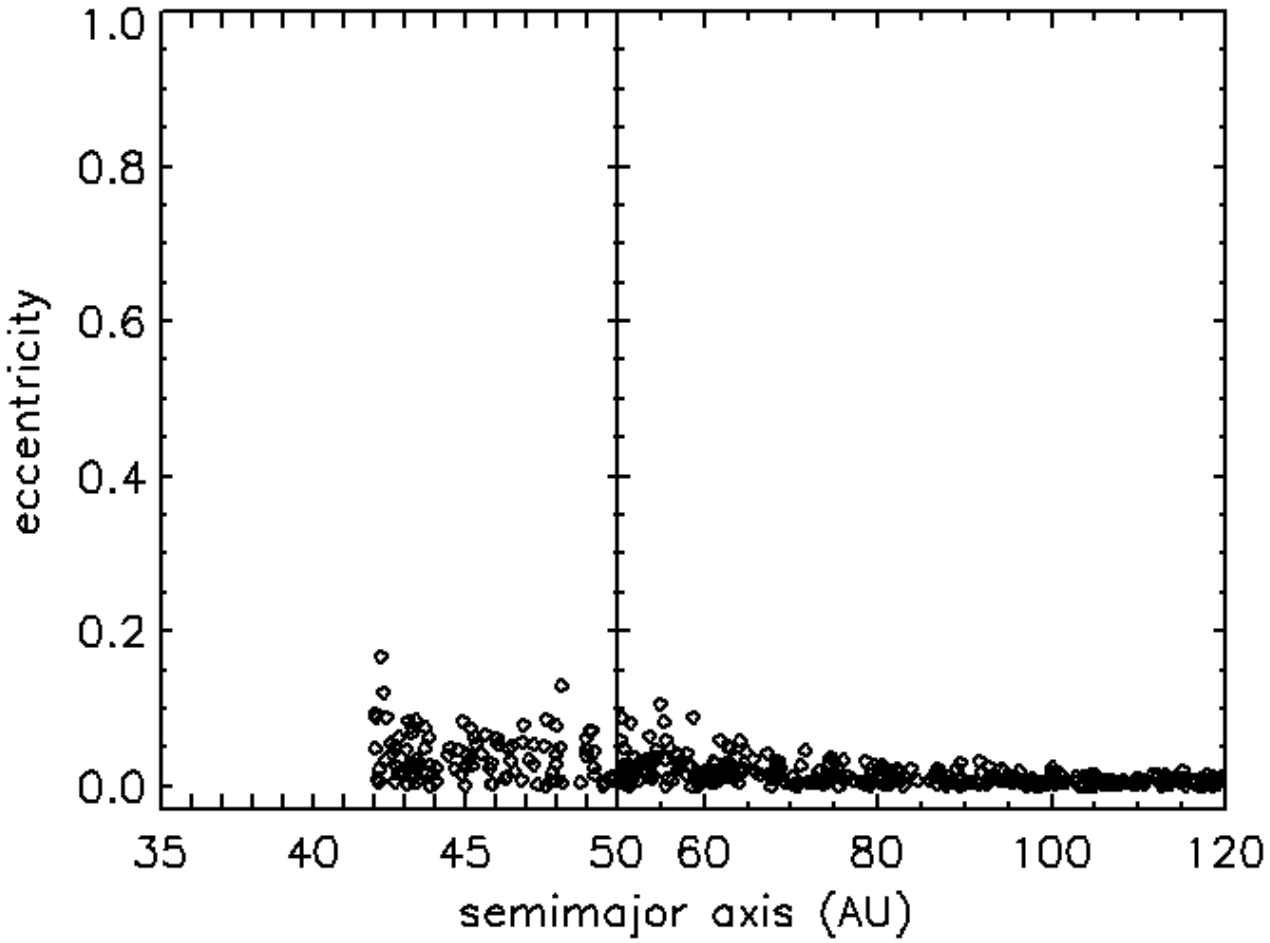
Kuiper Belt 3.0



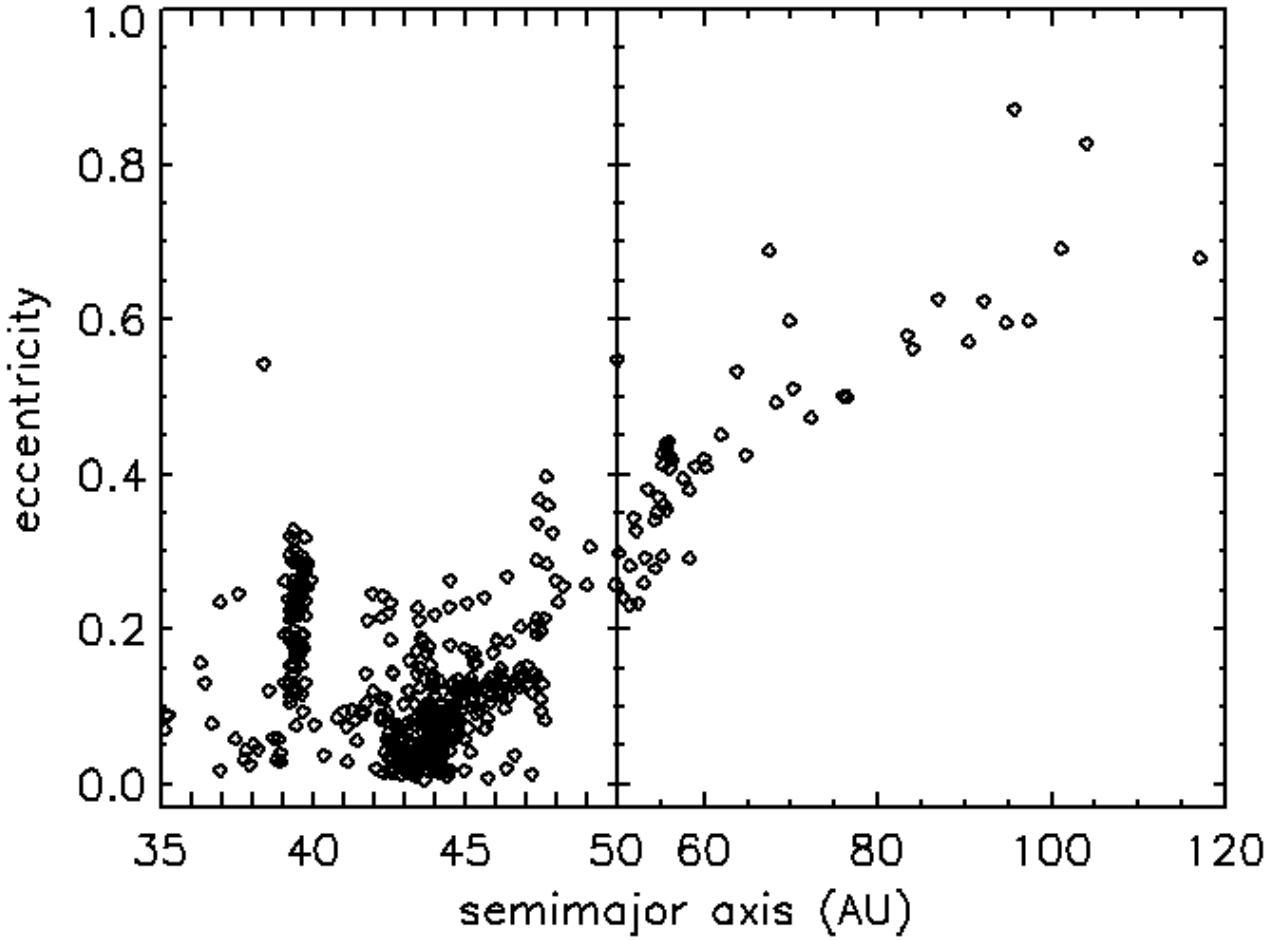
Mike Brown
Caltech


Kuiper Belt 3.0
(beta)
Mike Brown
Caltech

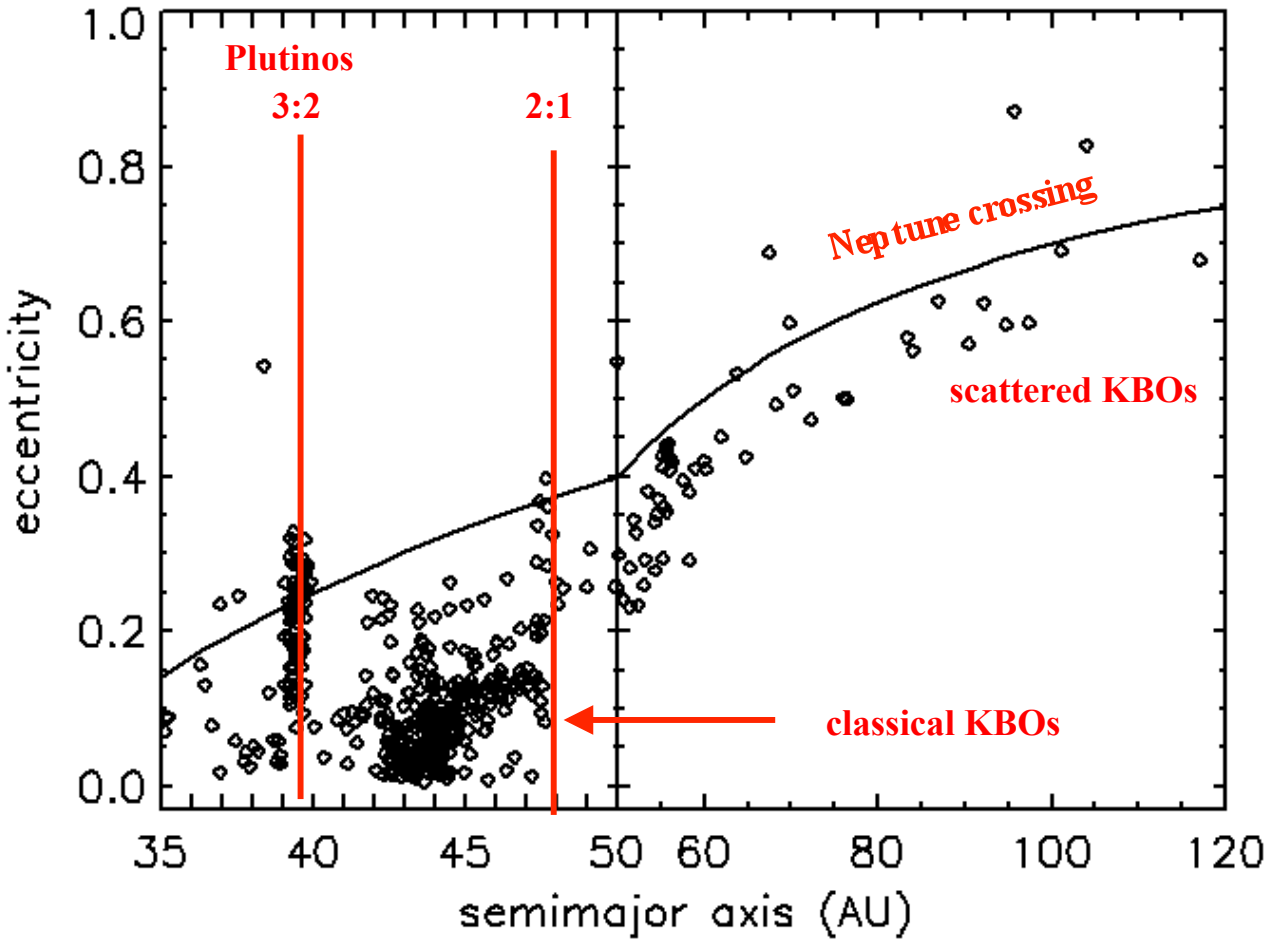
Kuiper belt 0.0



Kuiper belt 1.0



Kuiper belt 1.1



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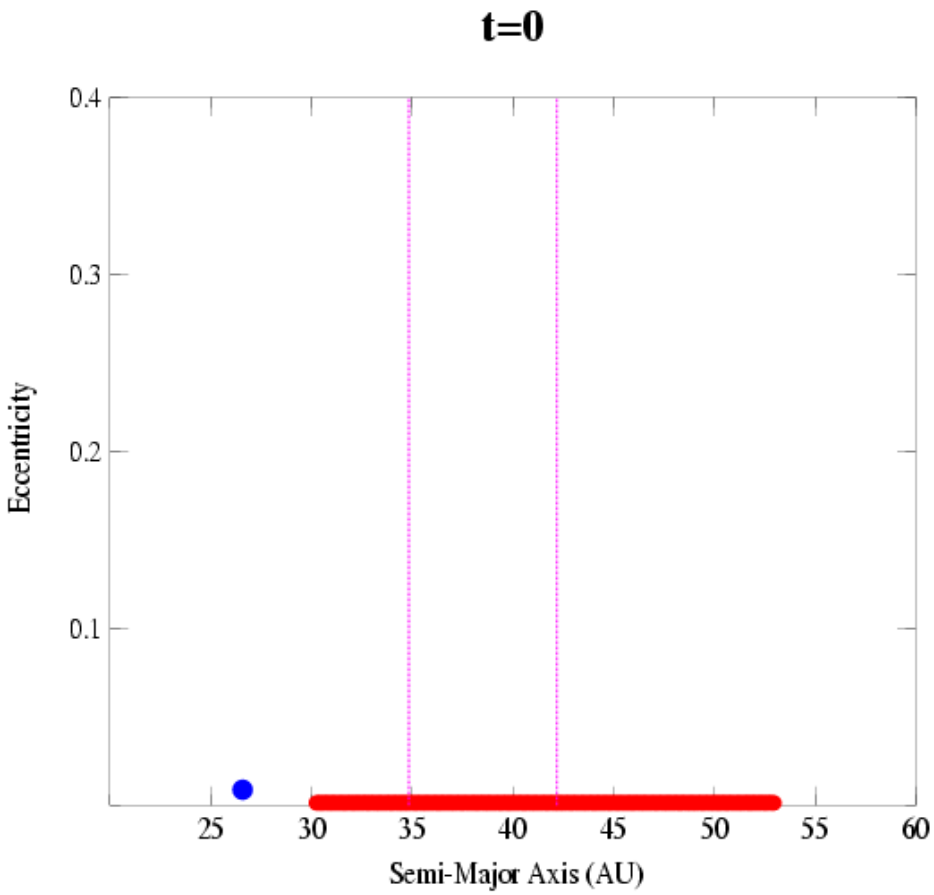

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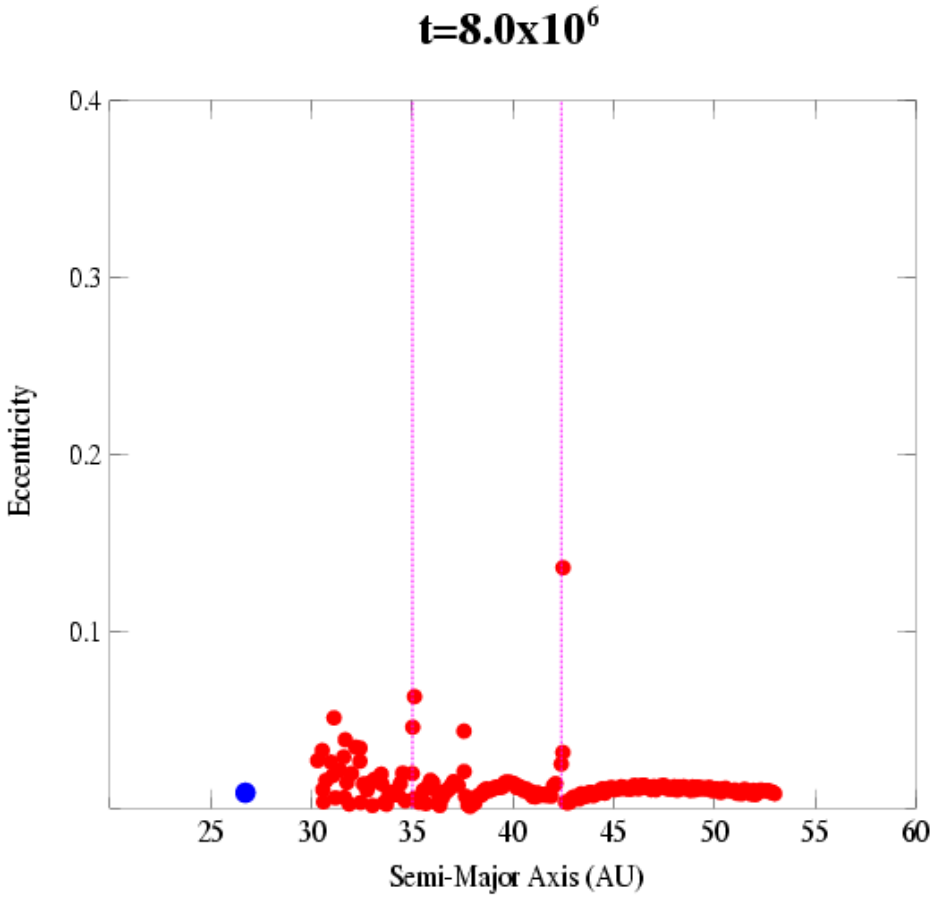

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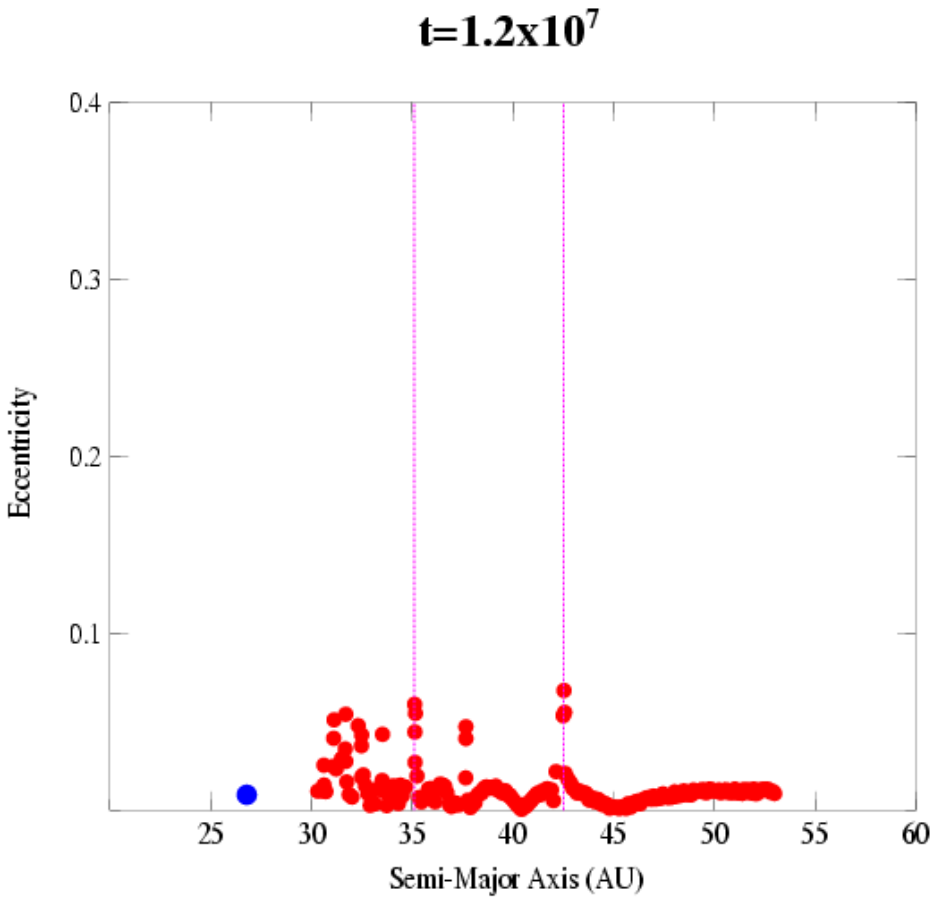

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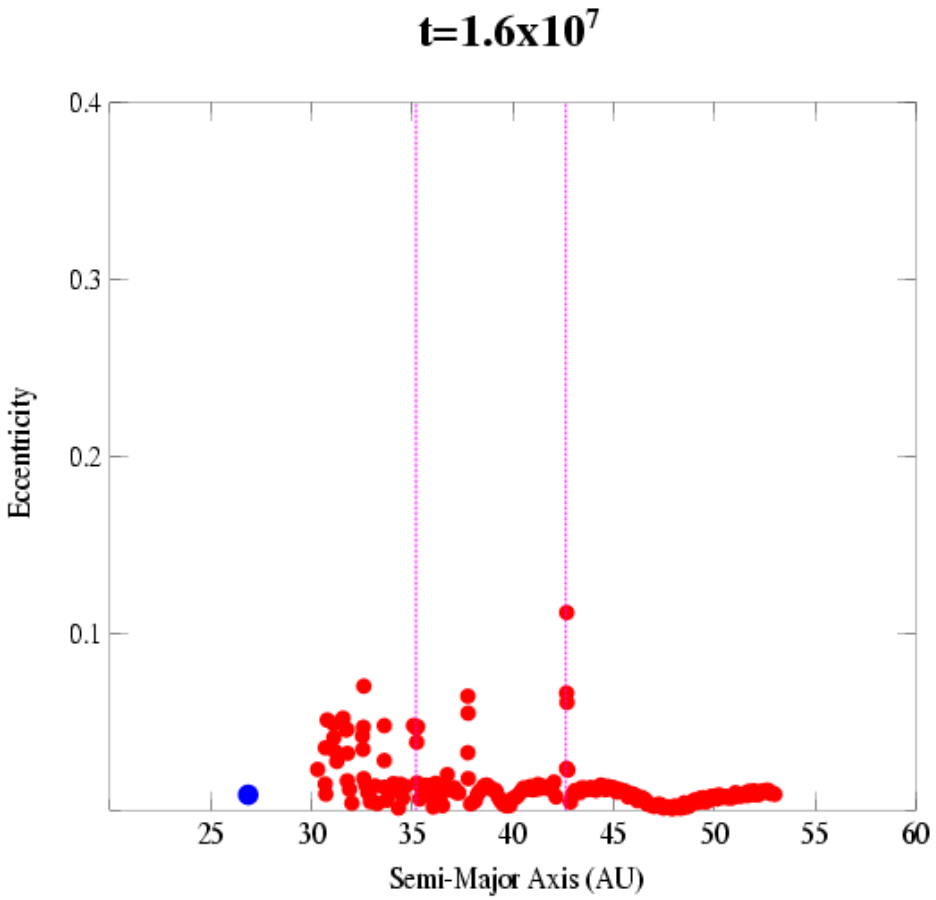

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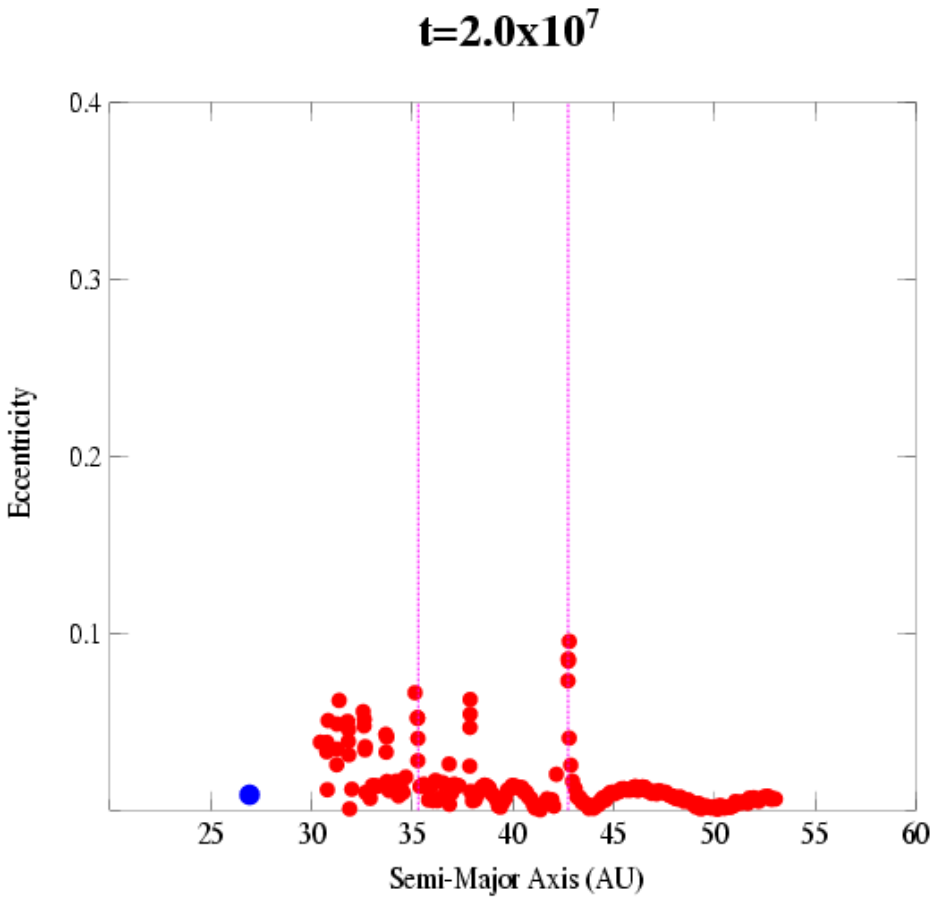

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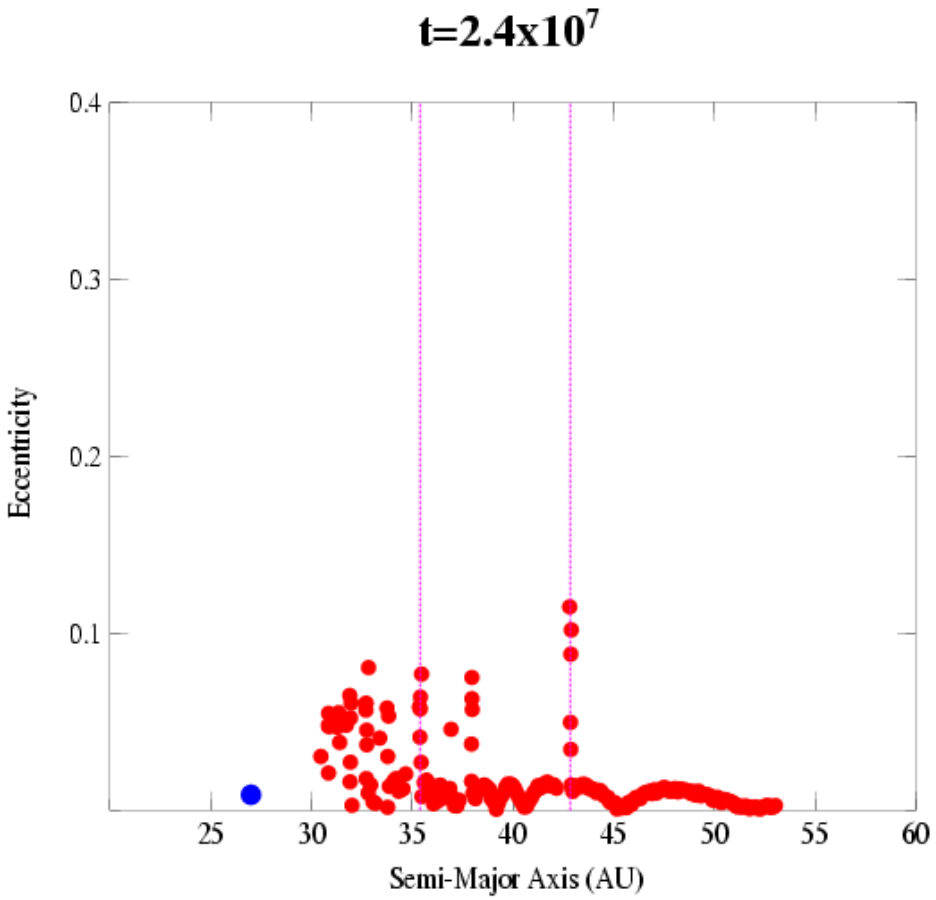

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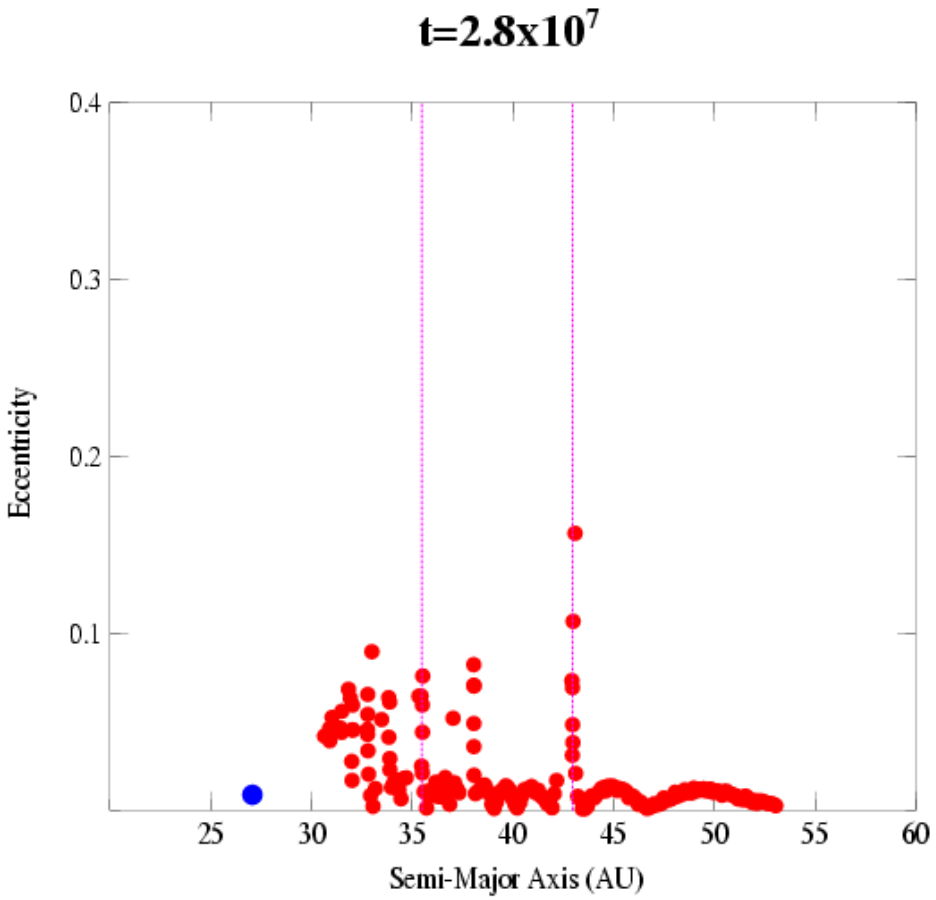

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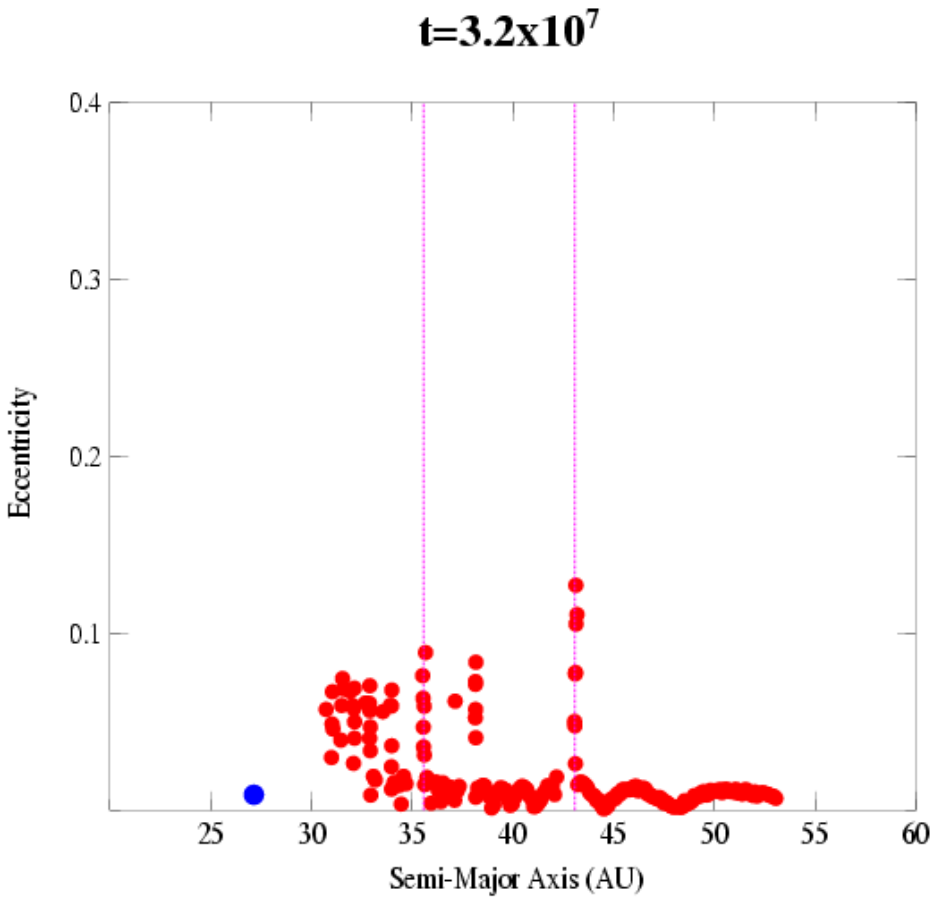

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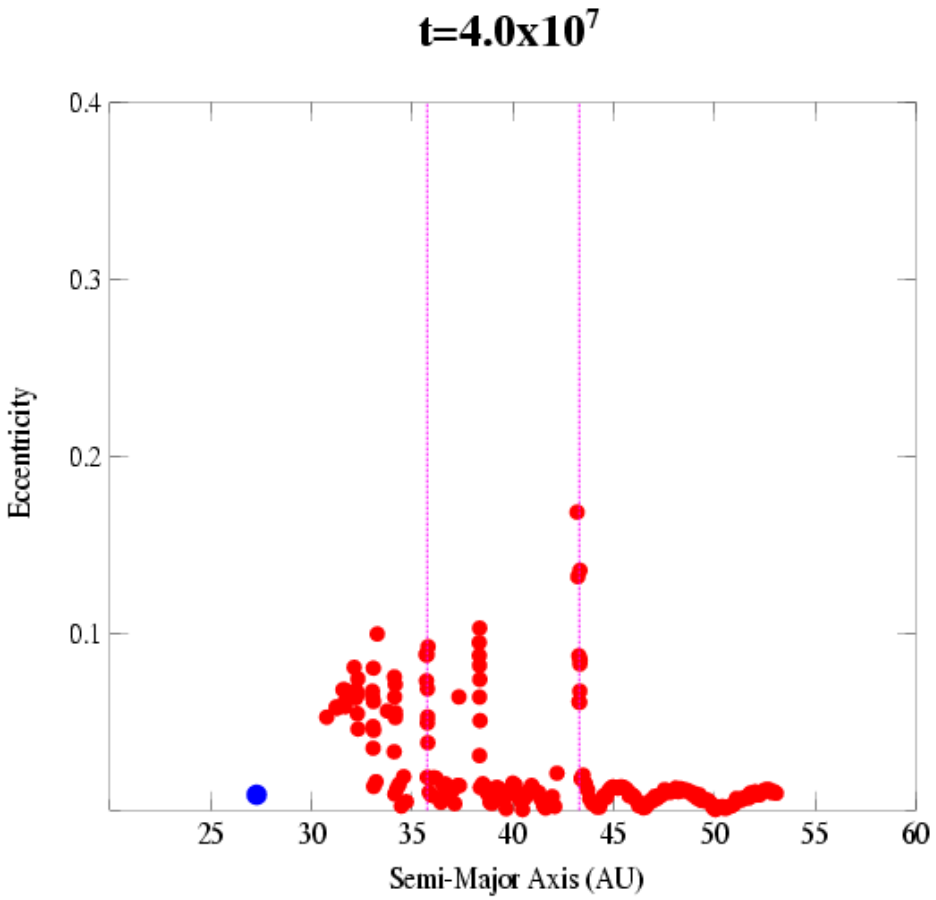

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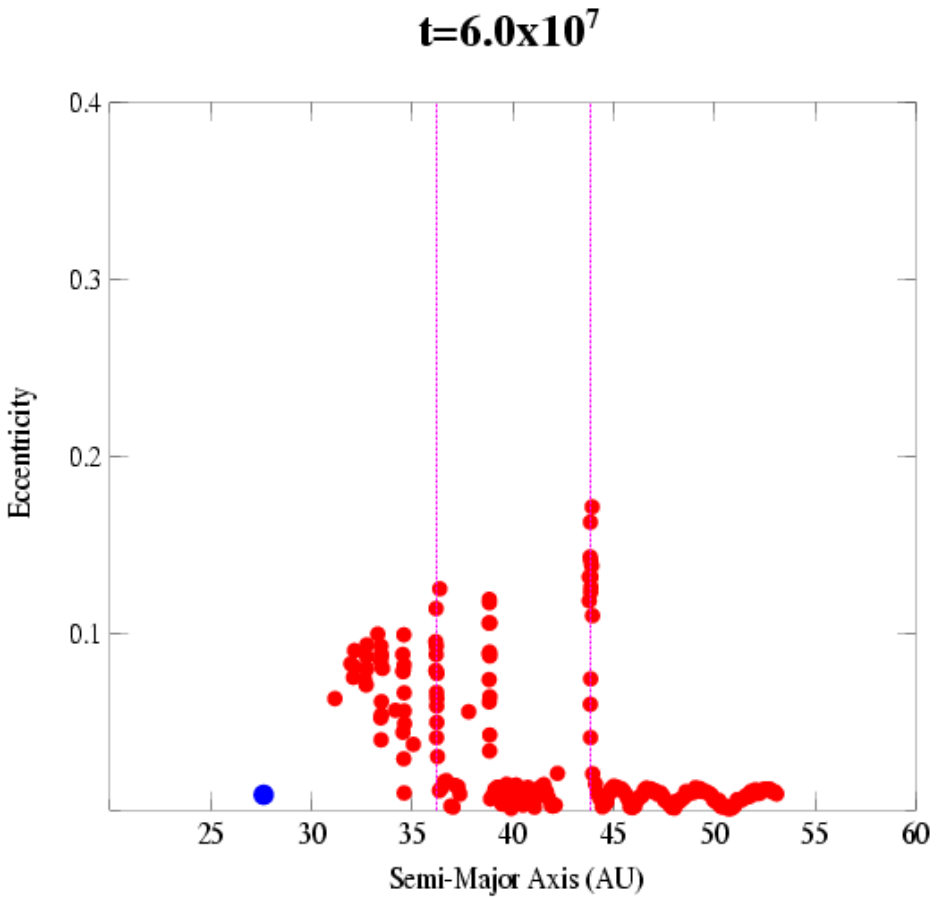

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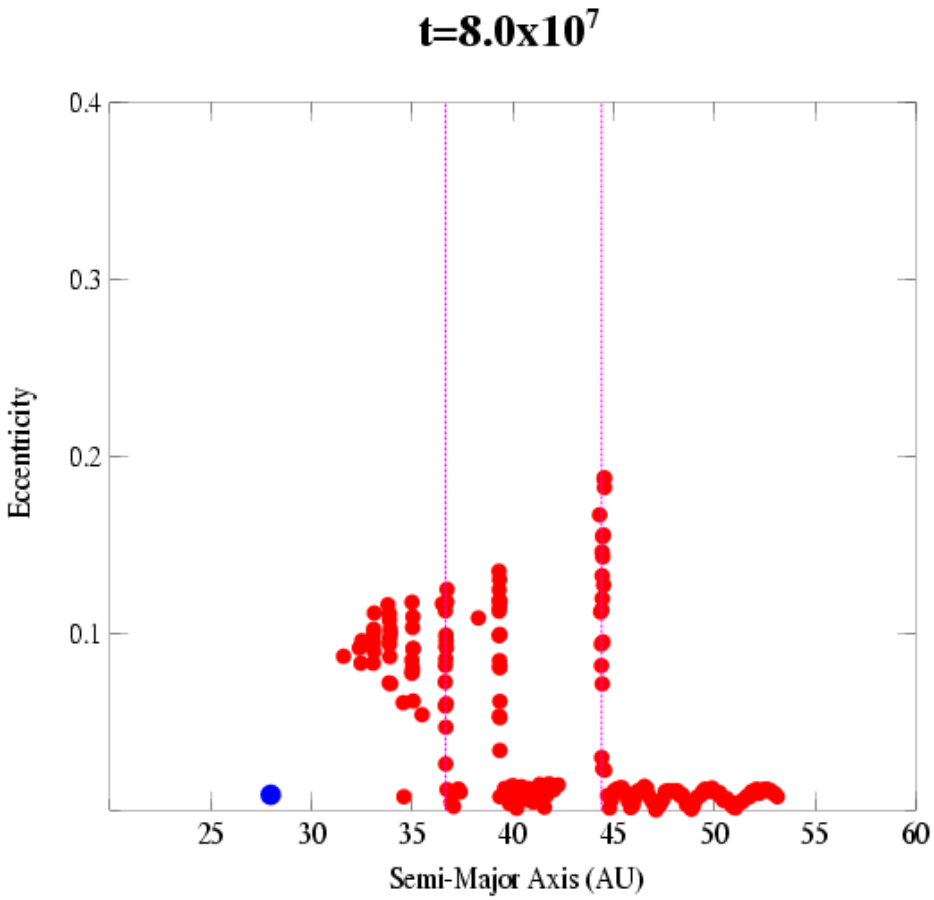

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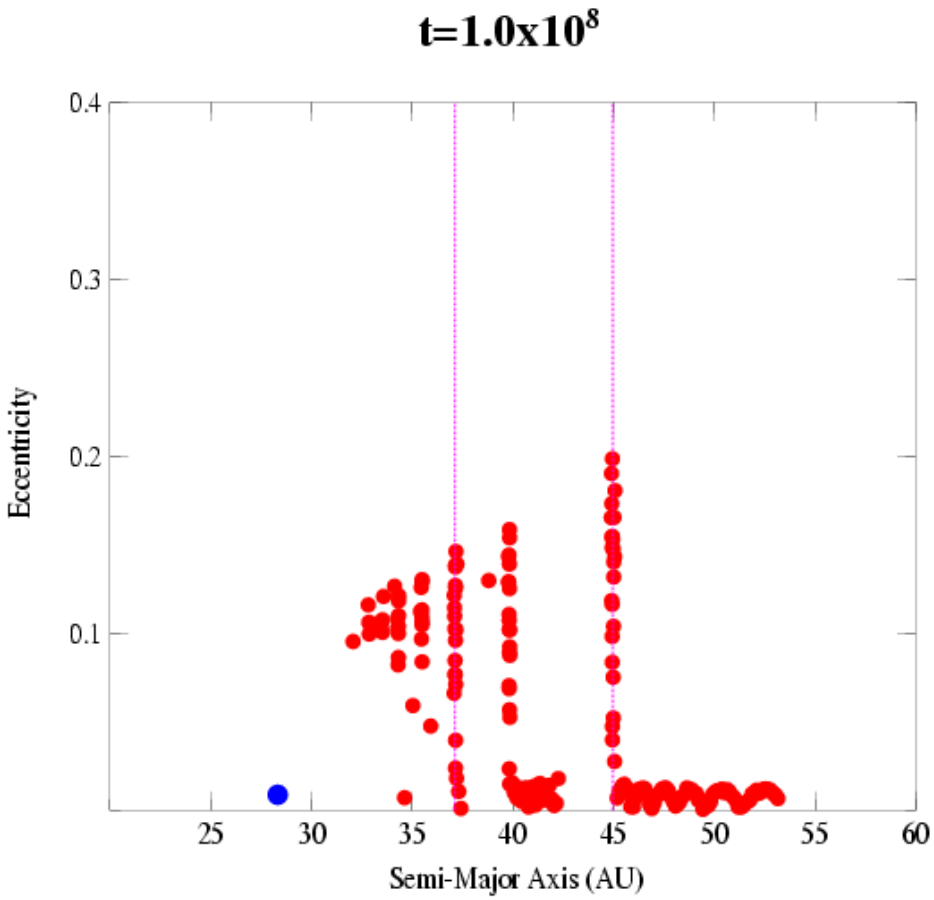

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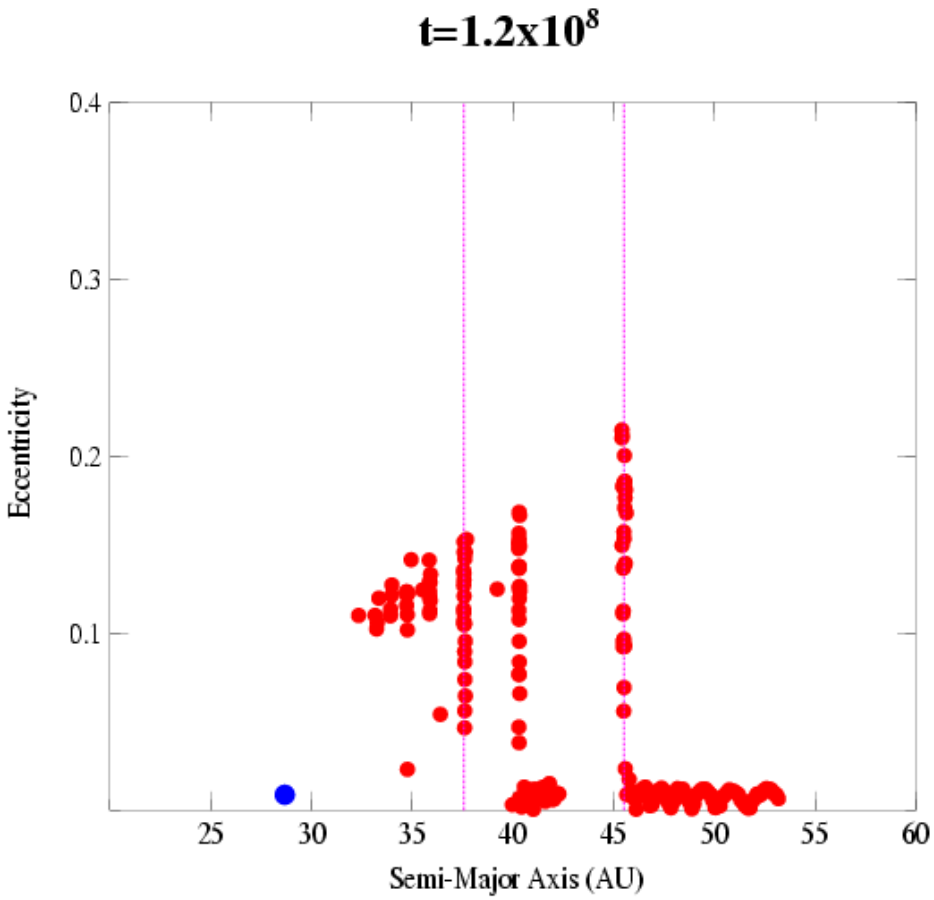

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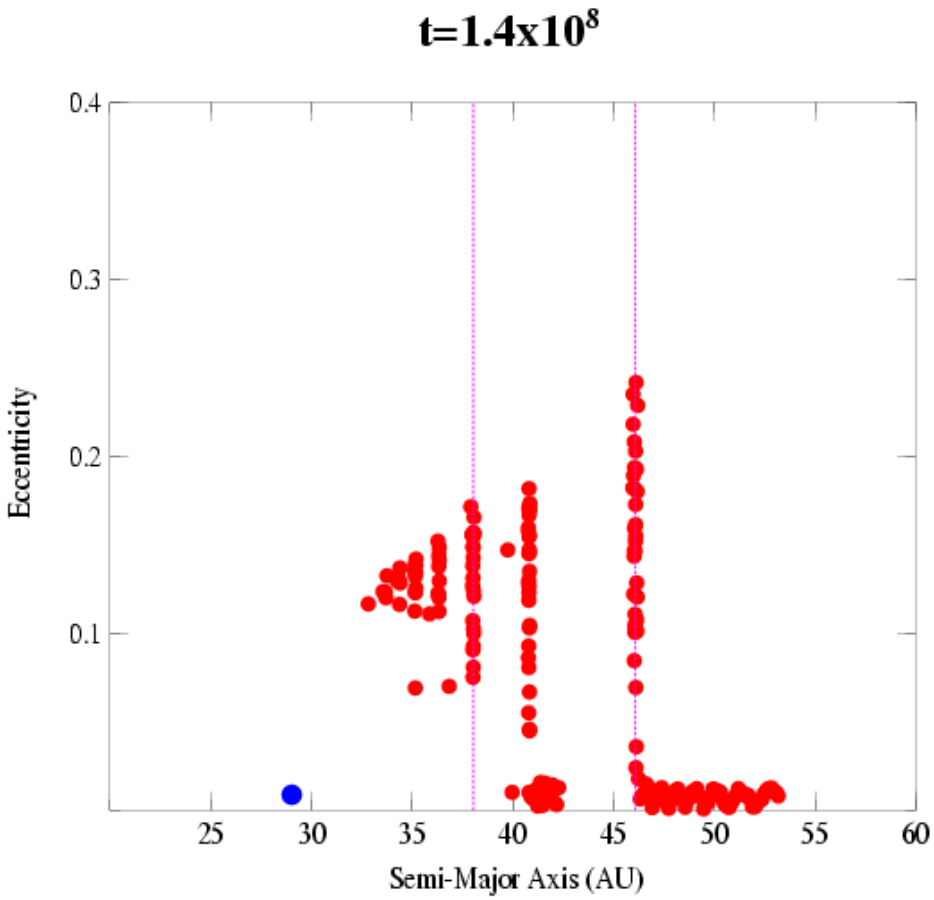

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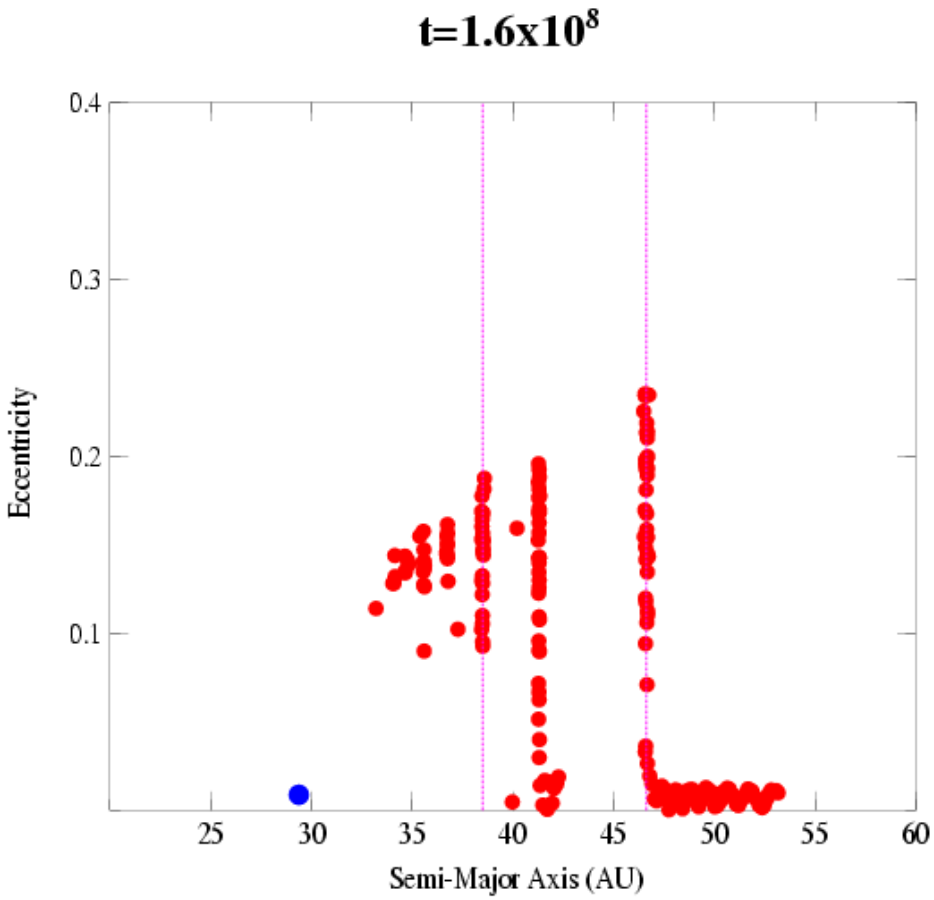

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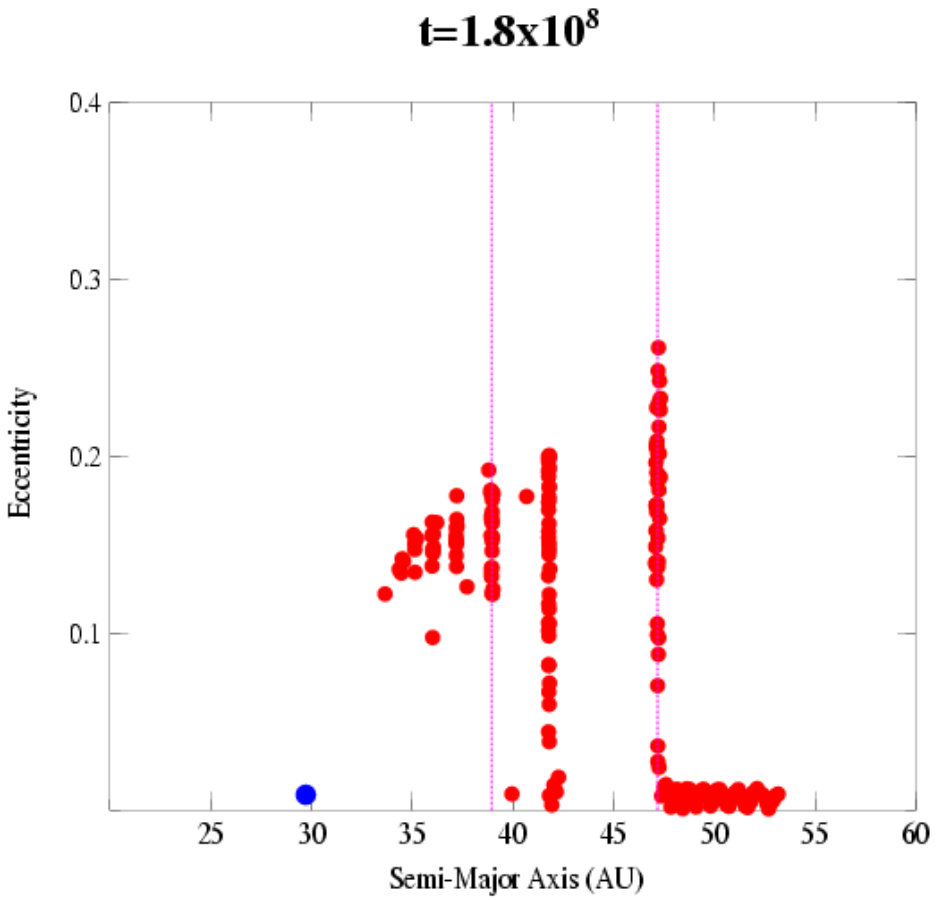

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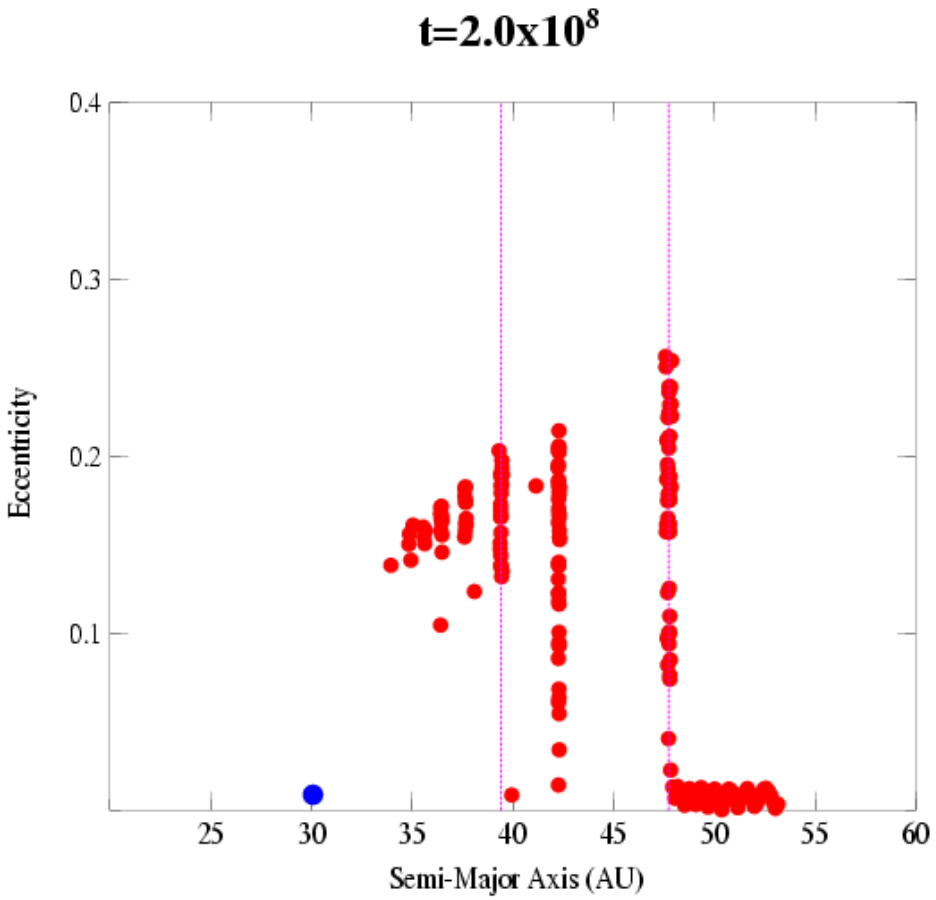
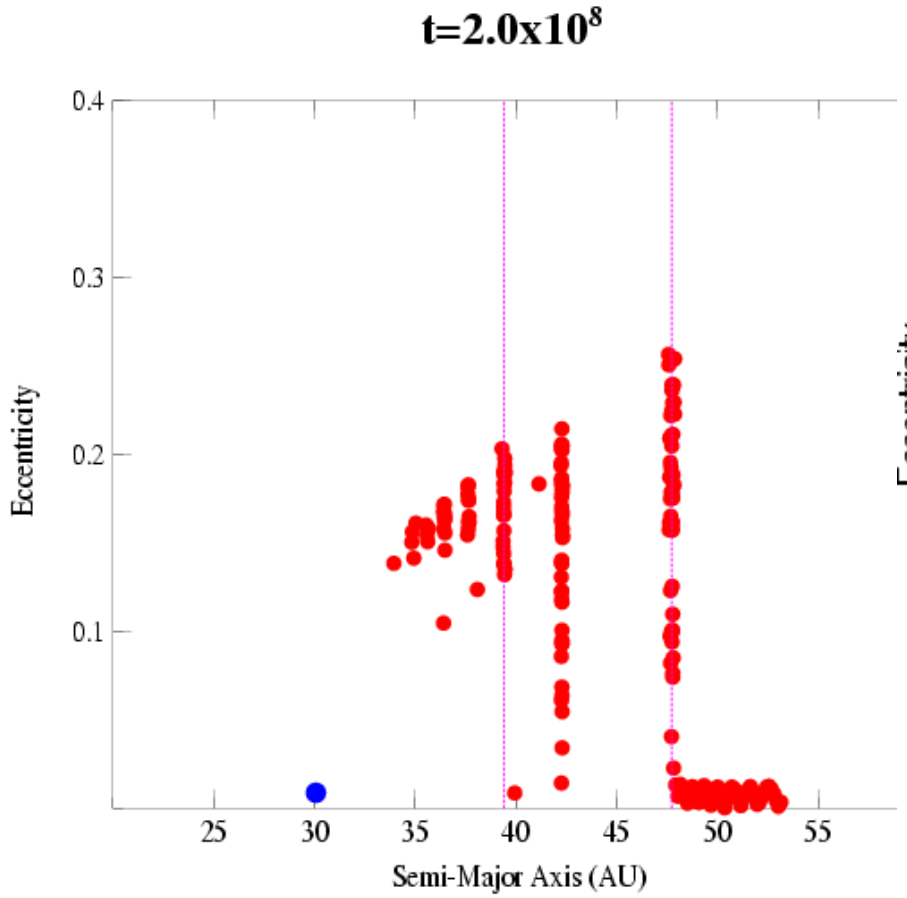
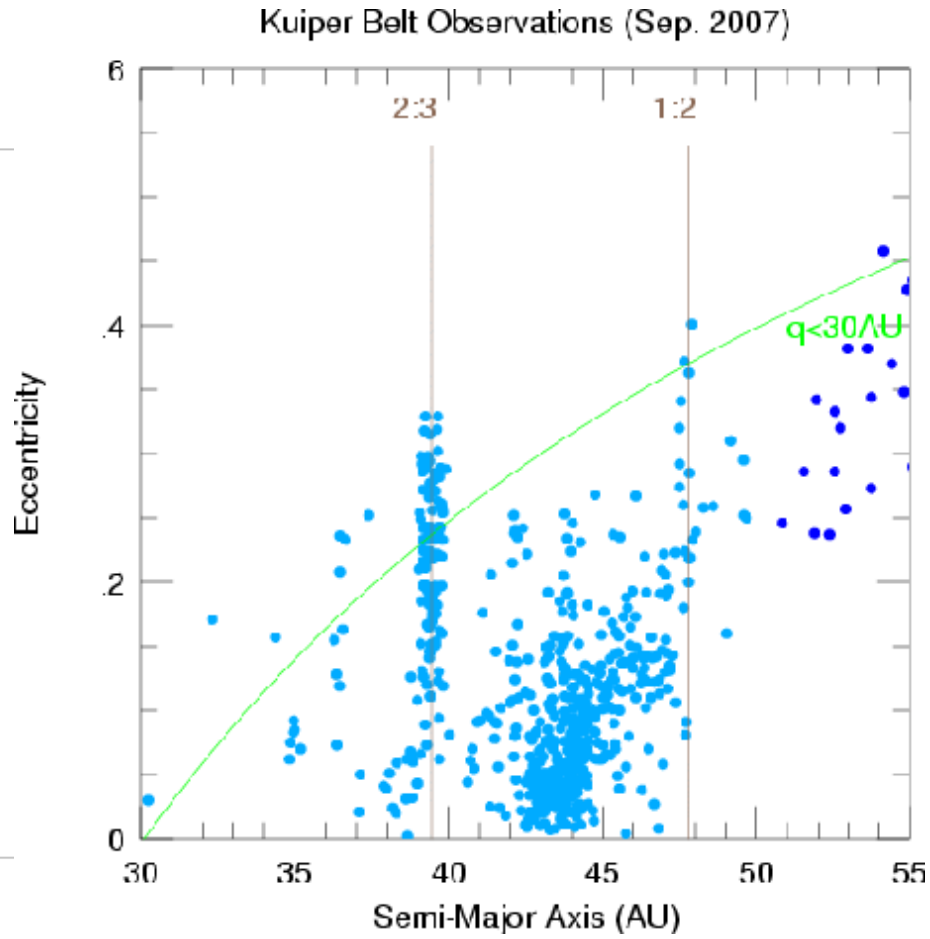
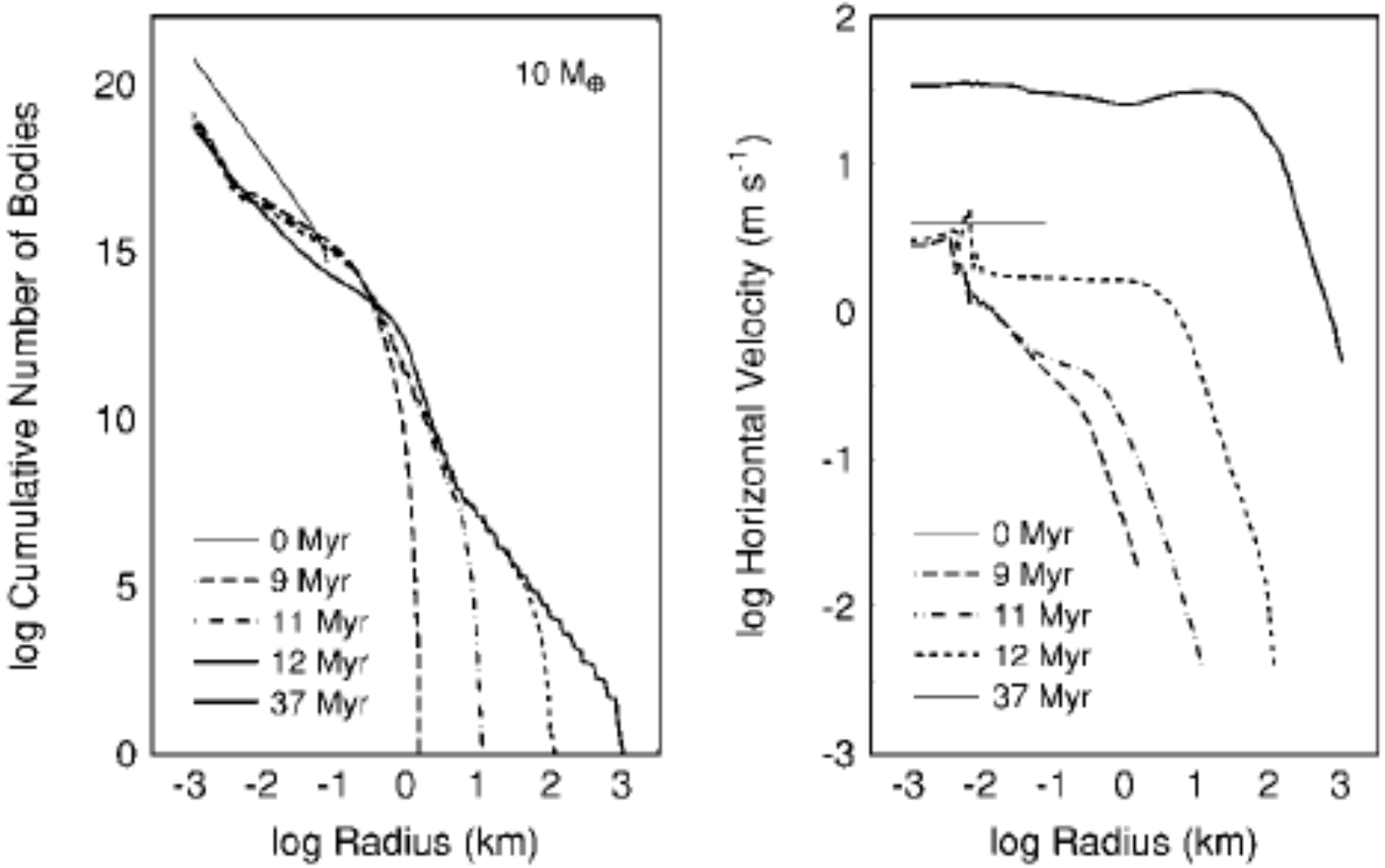


Kuiper belt 1.1



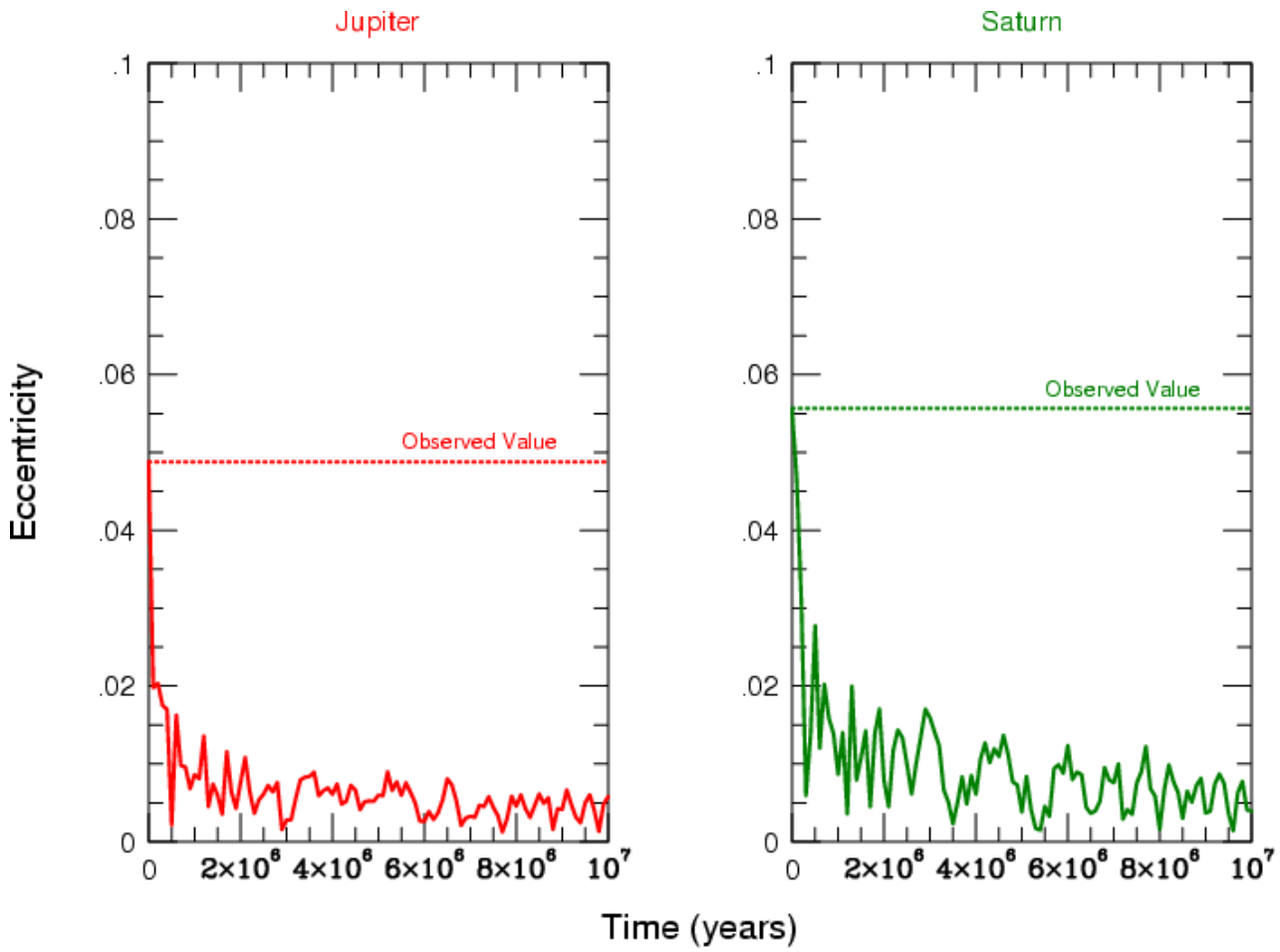


Kuiper belt 1.2



Dust 1.0

Kuiper belt 1.2; uh oh

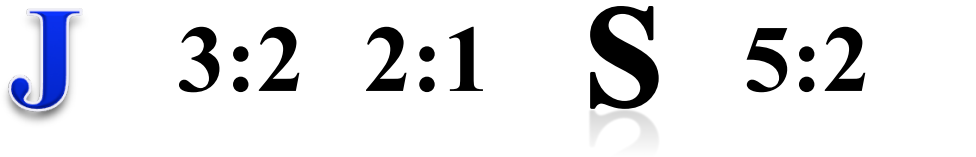


3:2 **2:1**

5:2

5.2 AU	6.8 AU	8.2 AU	9.2 AU	9.6AU
11.6 yrs	17.8 yr	23.7 yr	29.5 yr	29.6 yr

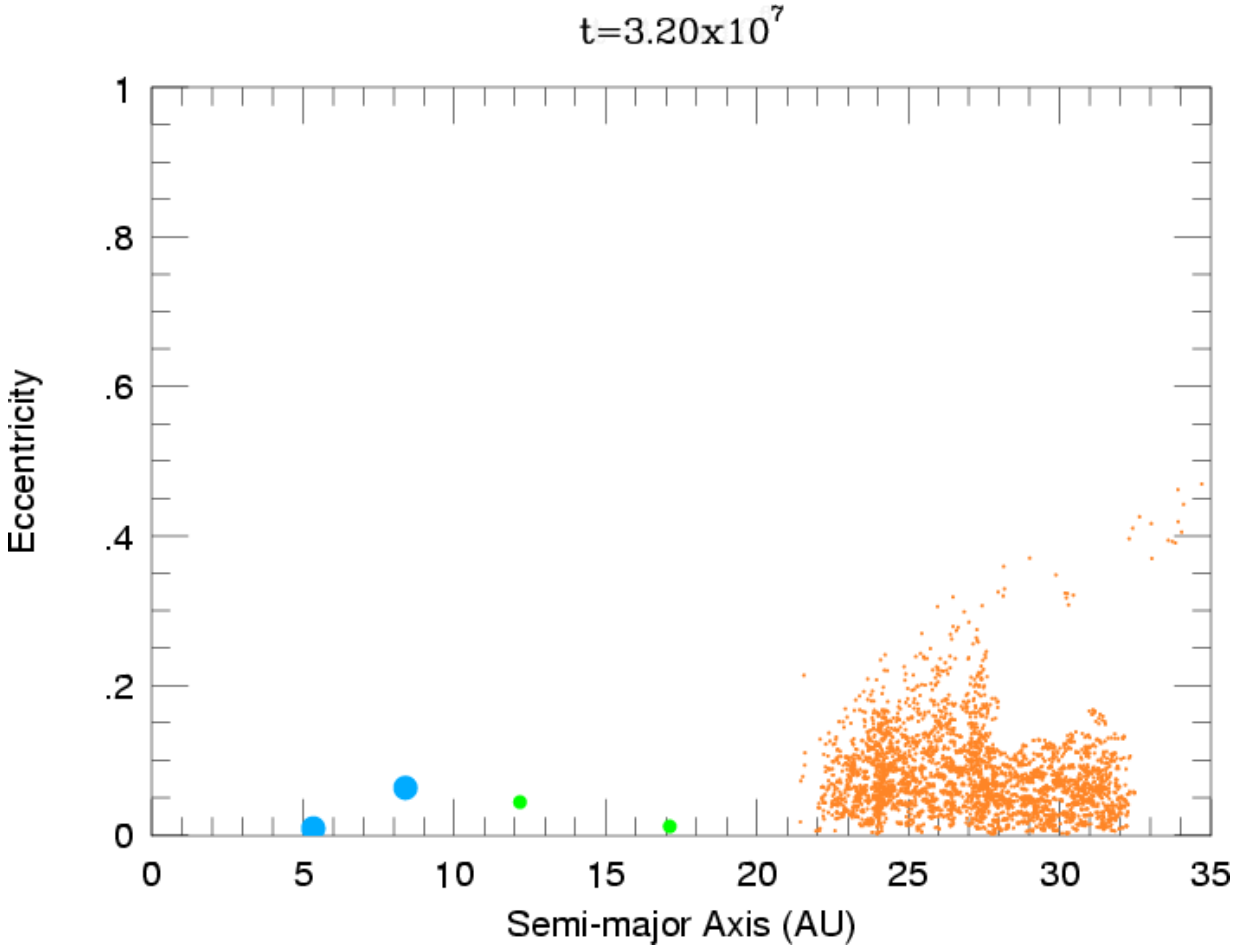
Kuiper belt 2.0



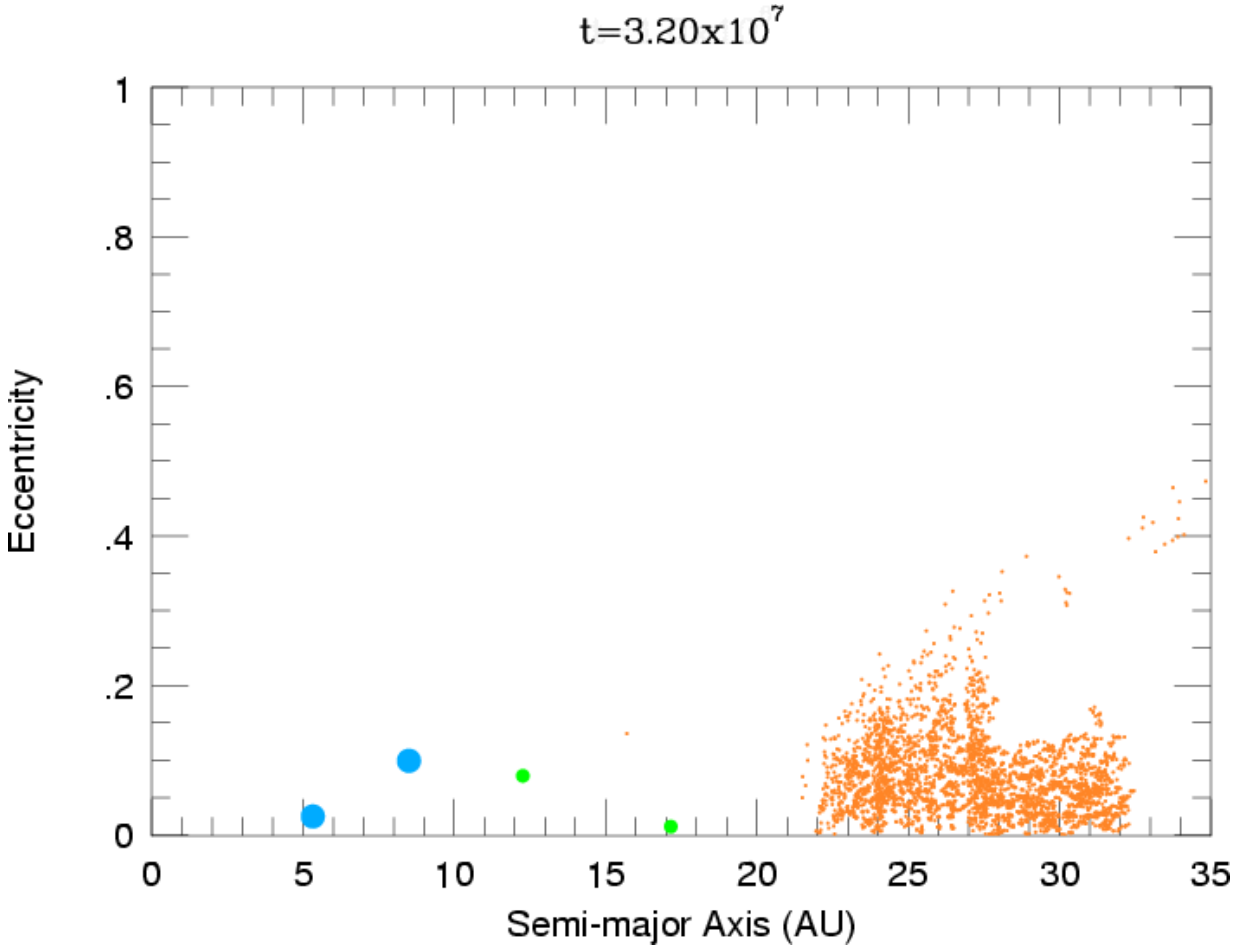
5.2 AU	6.8 AU	8.2 AU	9.2 AU	9.6AU
11.6 yrs	17.8 yr	23.7 yr	29.5 yr	29.6 yr

5.6 AU	7.3 AU	8.6 AU	8.8 AU	10.3AU
13.2 yrs	19.9 yr	25.2 yr	26.5 yr	33.1 yr

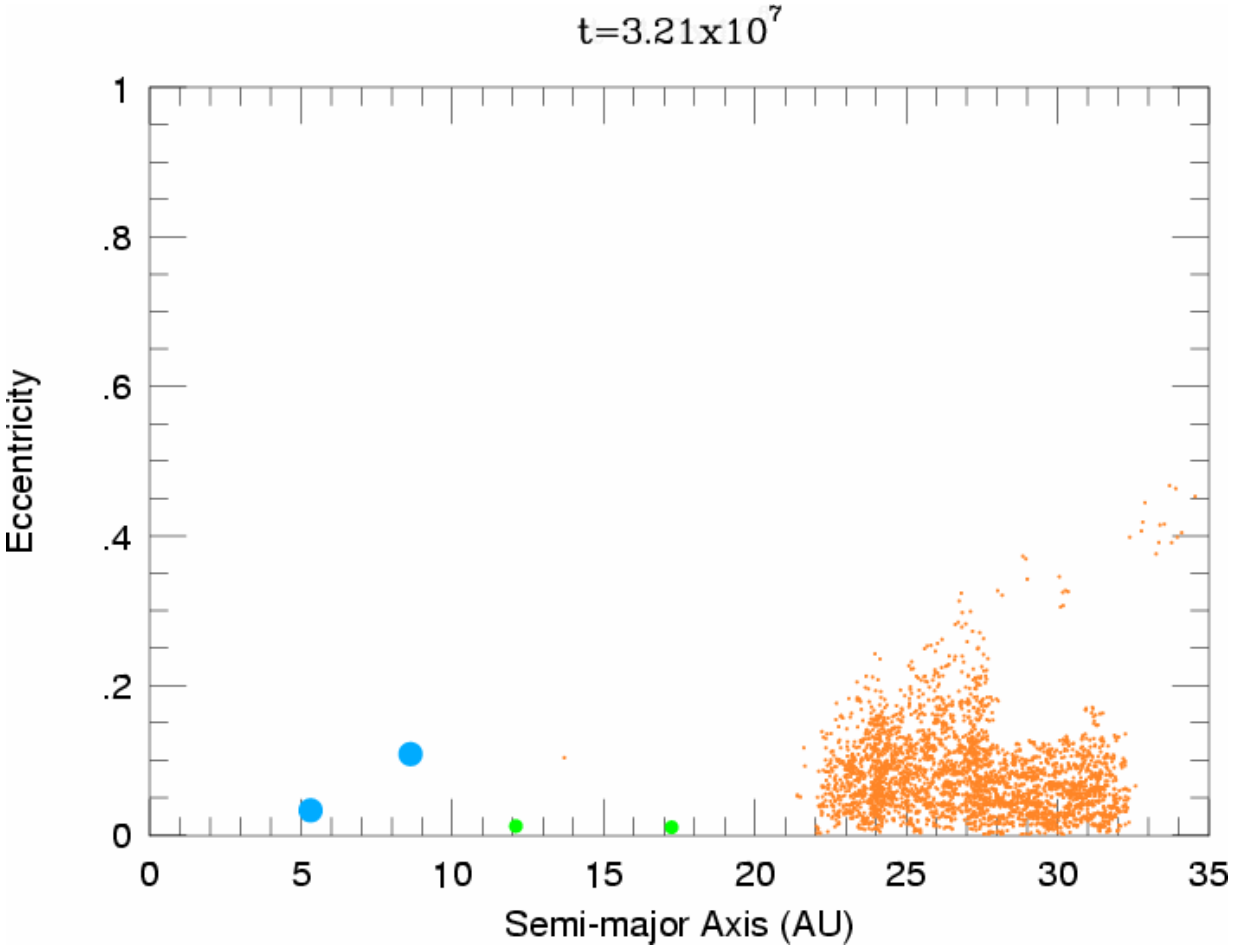
Kuiper belt 2.0



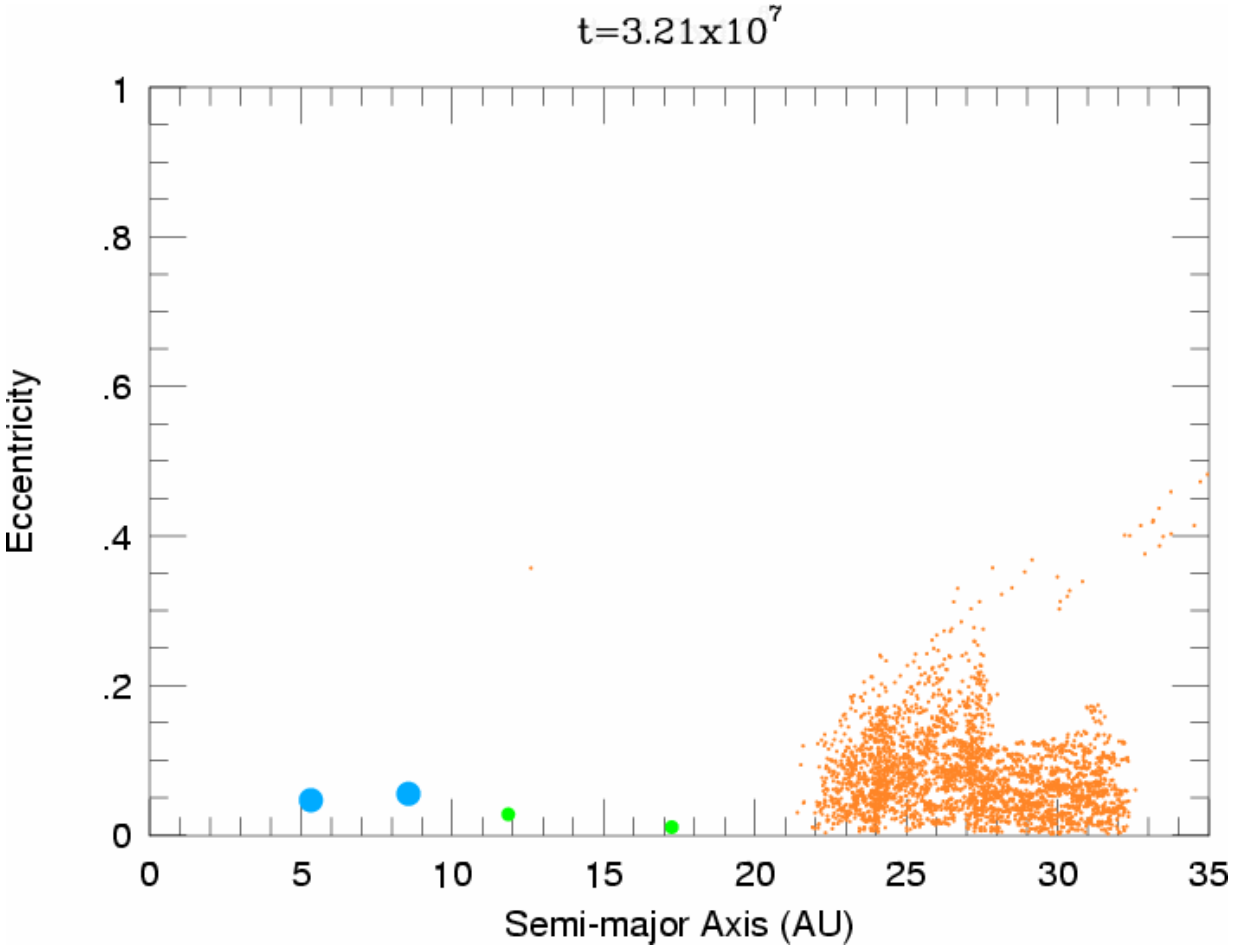
Kuiper belt 2.0



Kuiper belt 2.0



Kuiper belt 2.0



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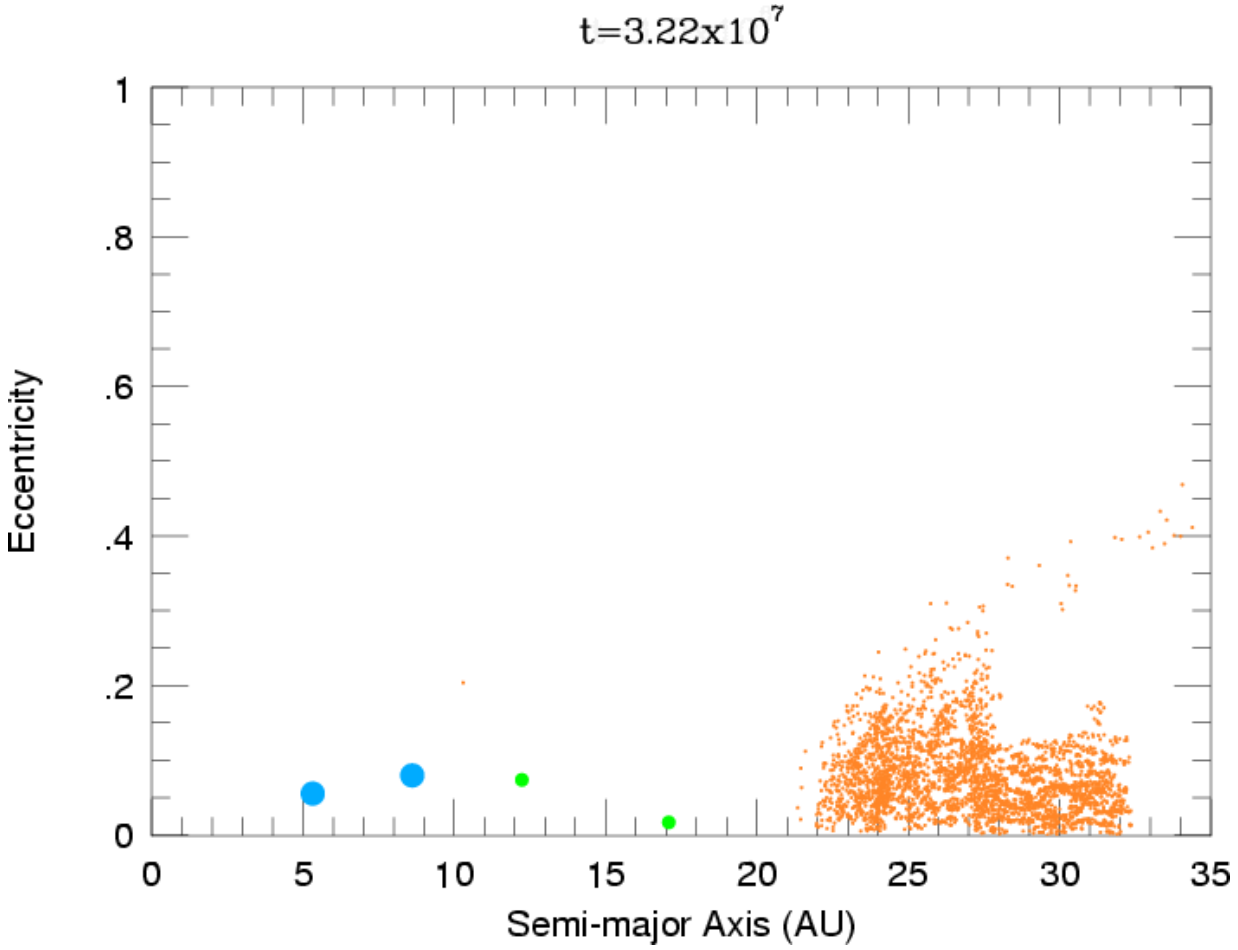

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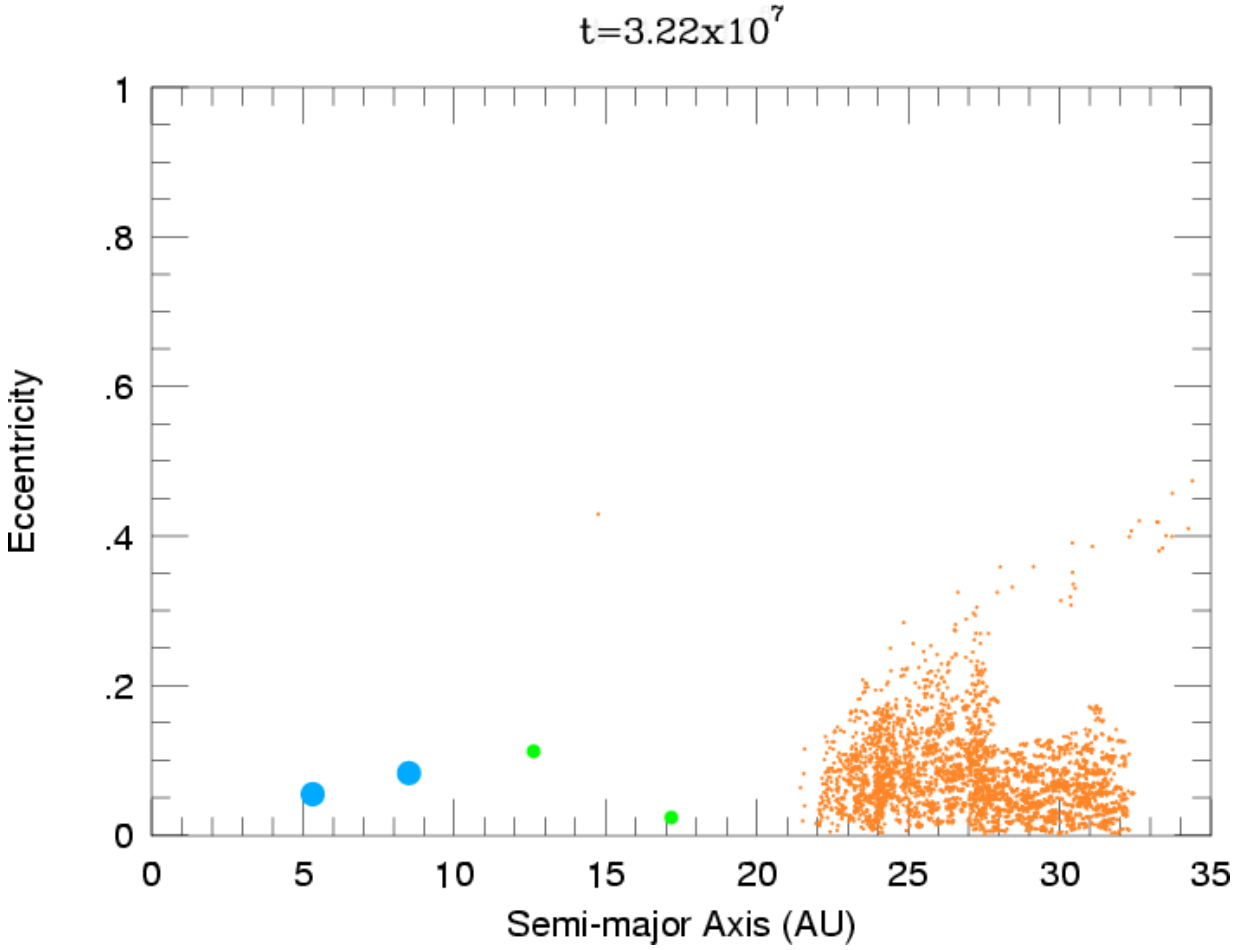

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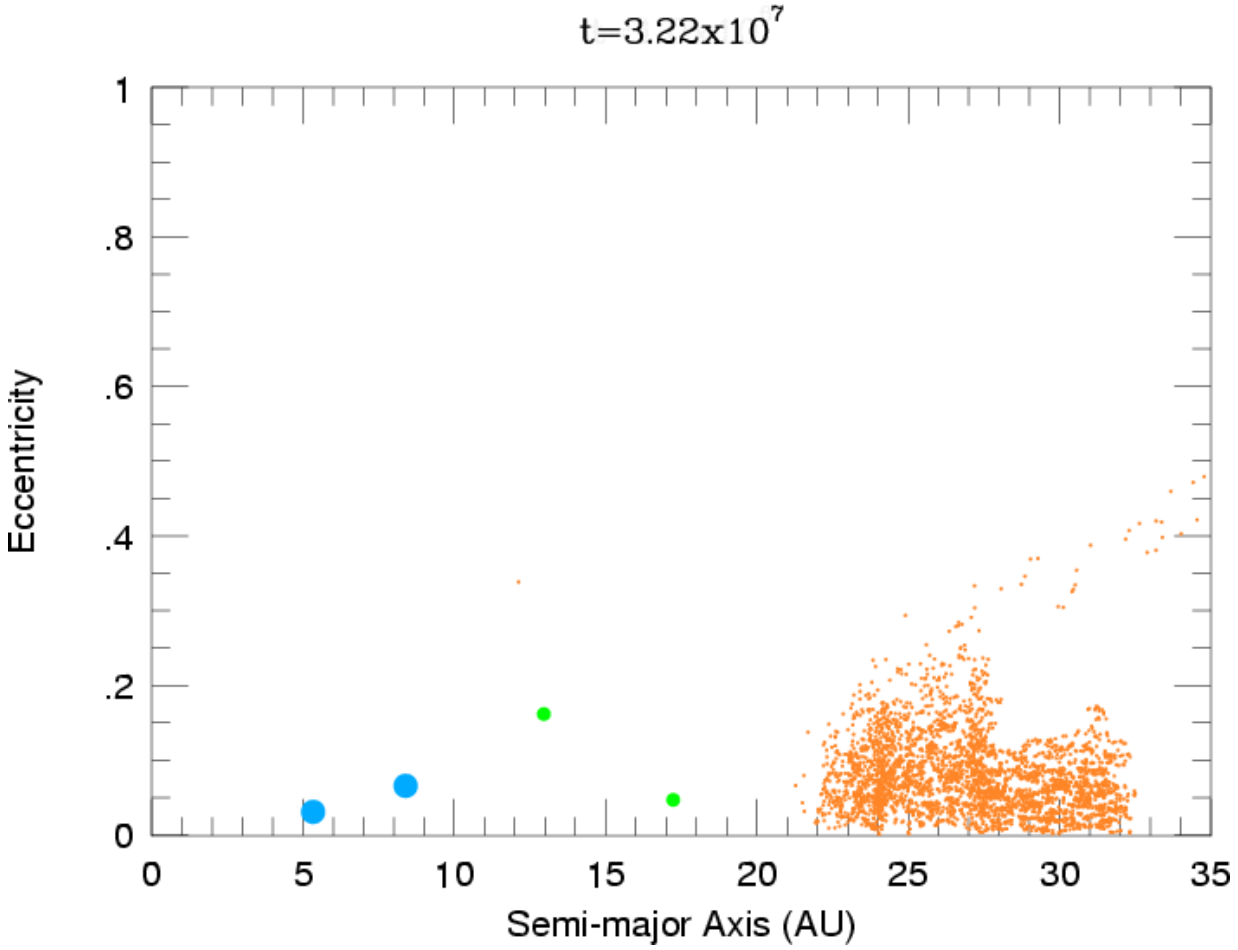

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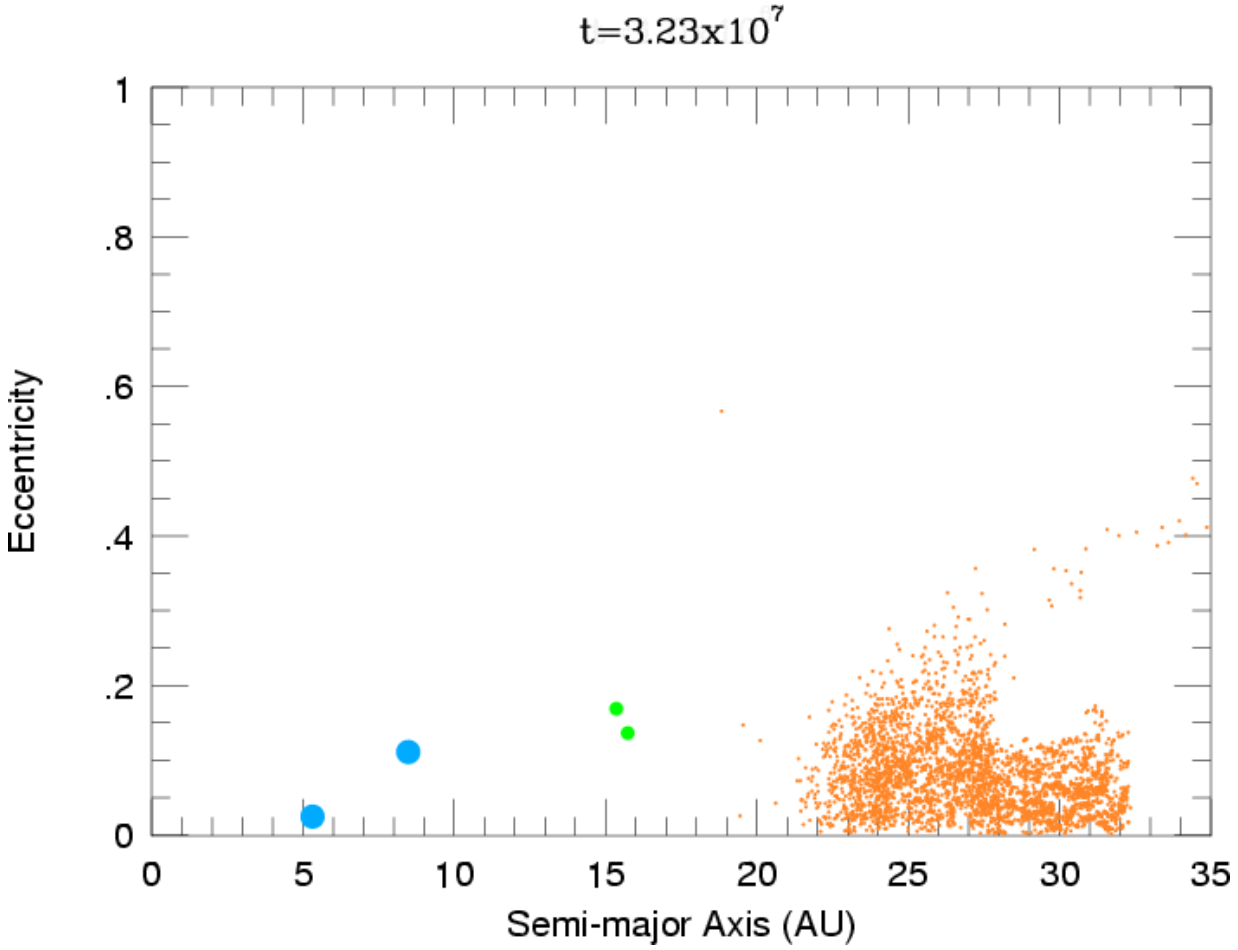

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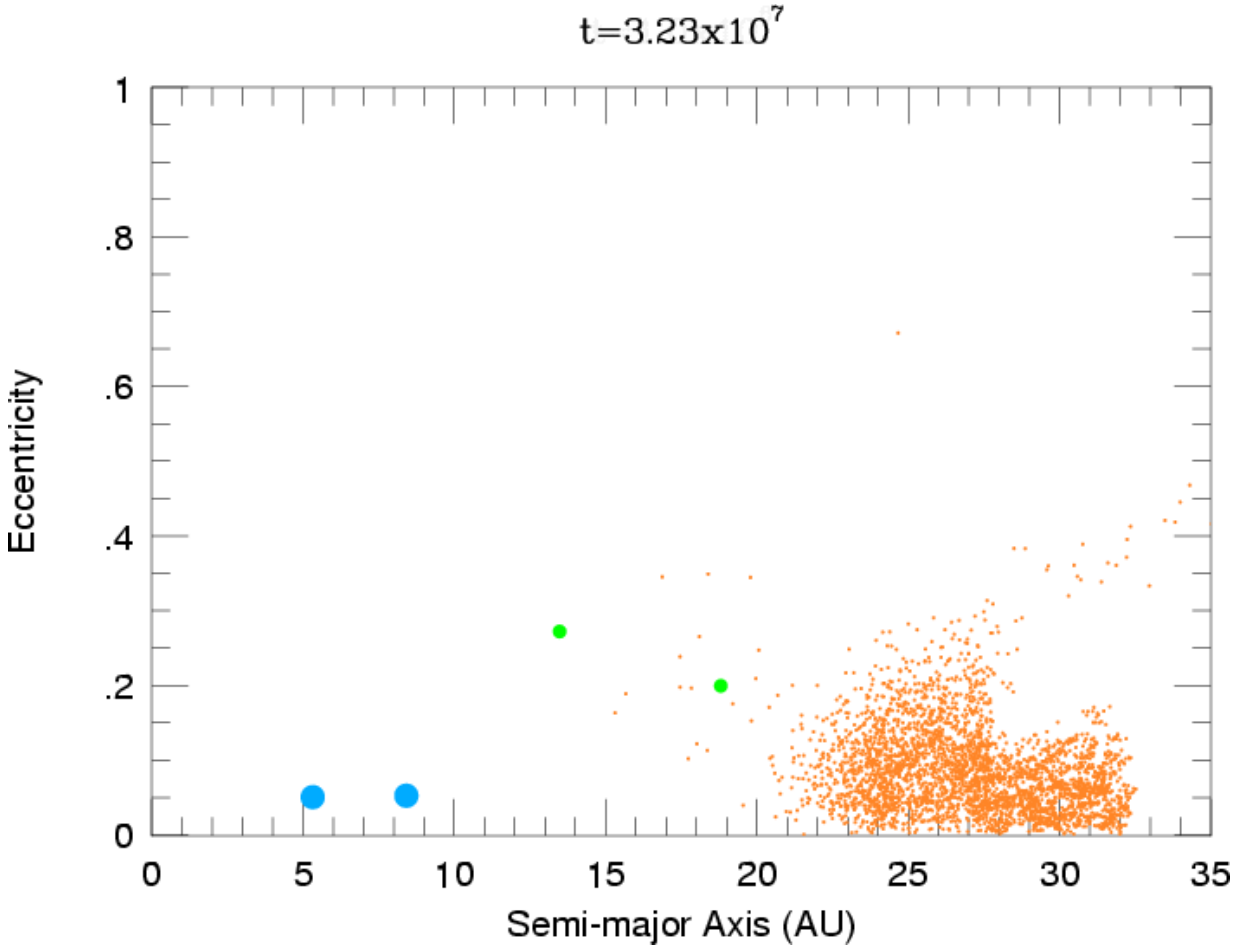

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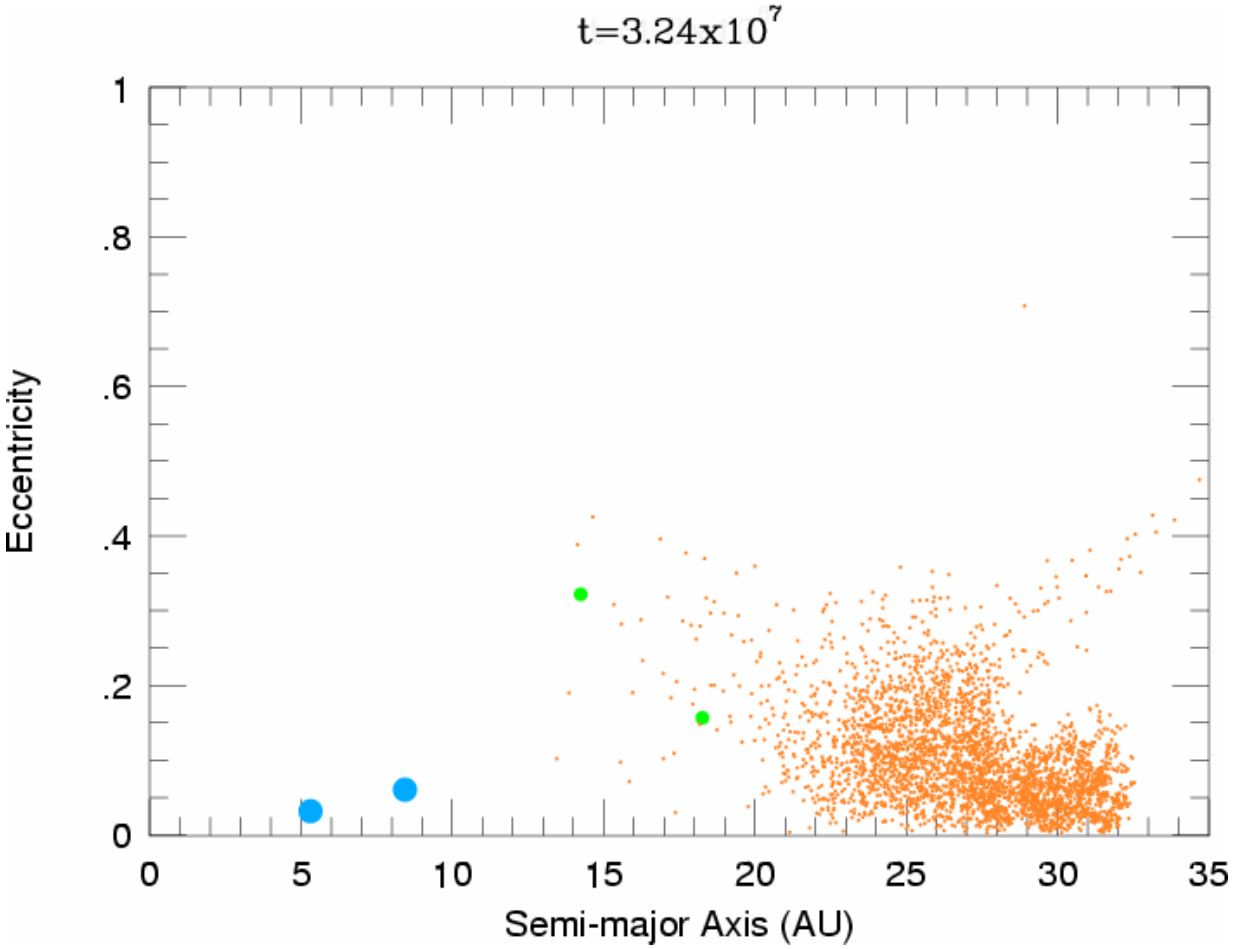

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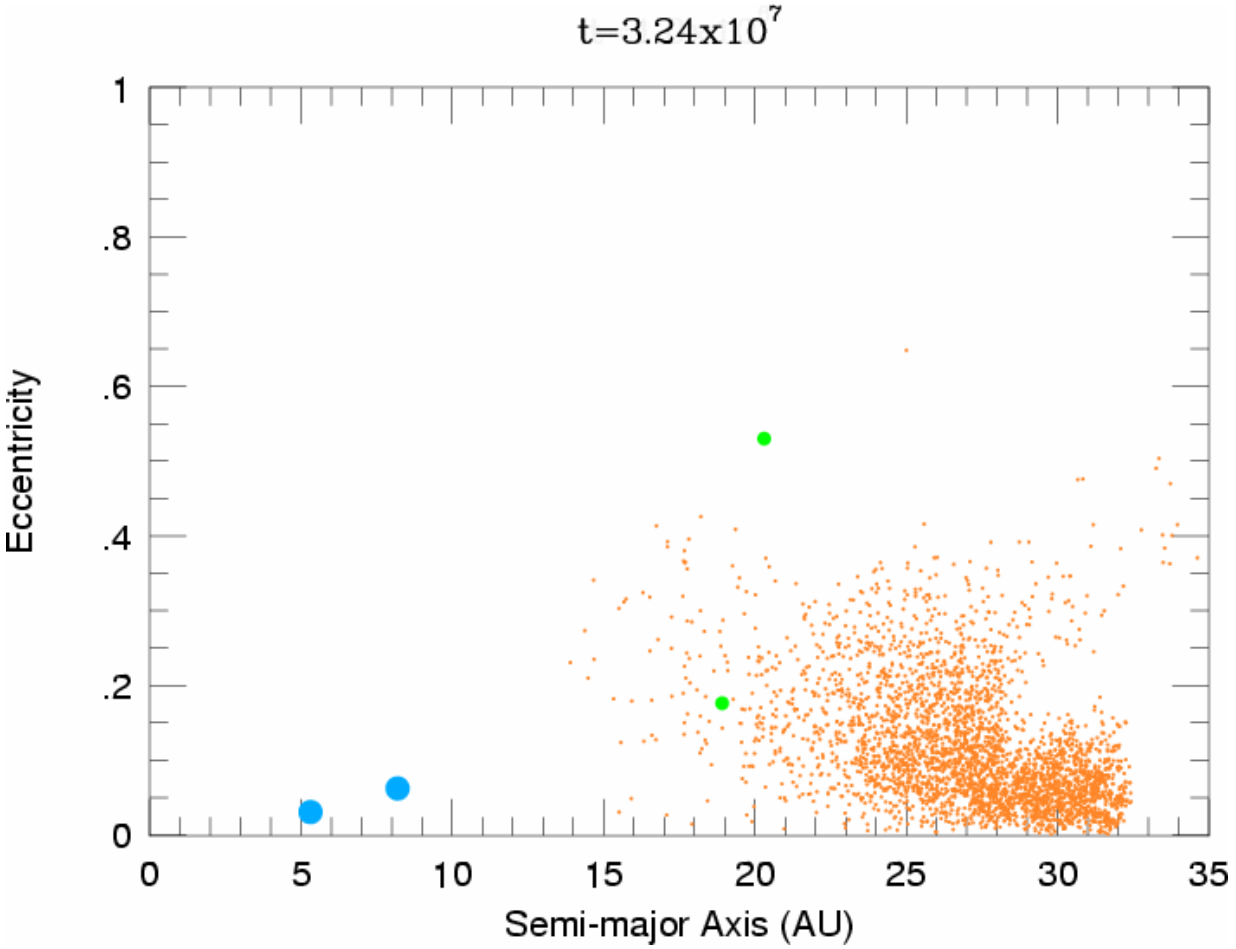
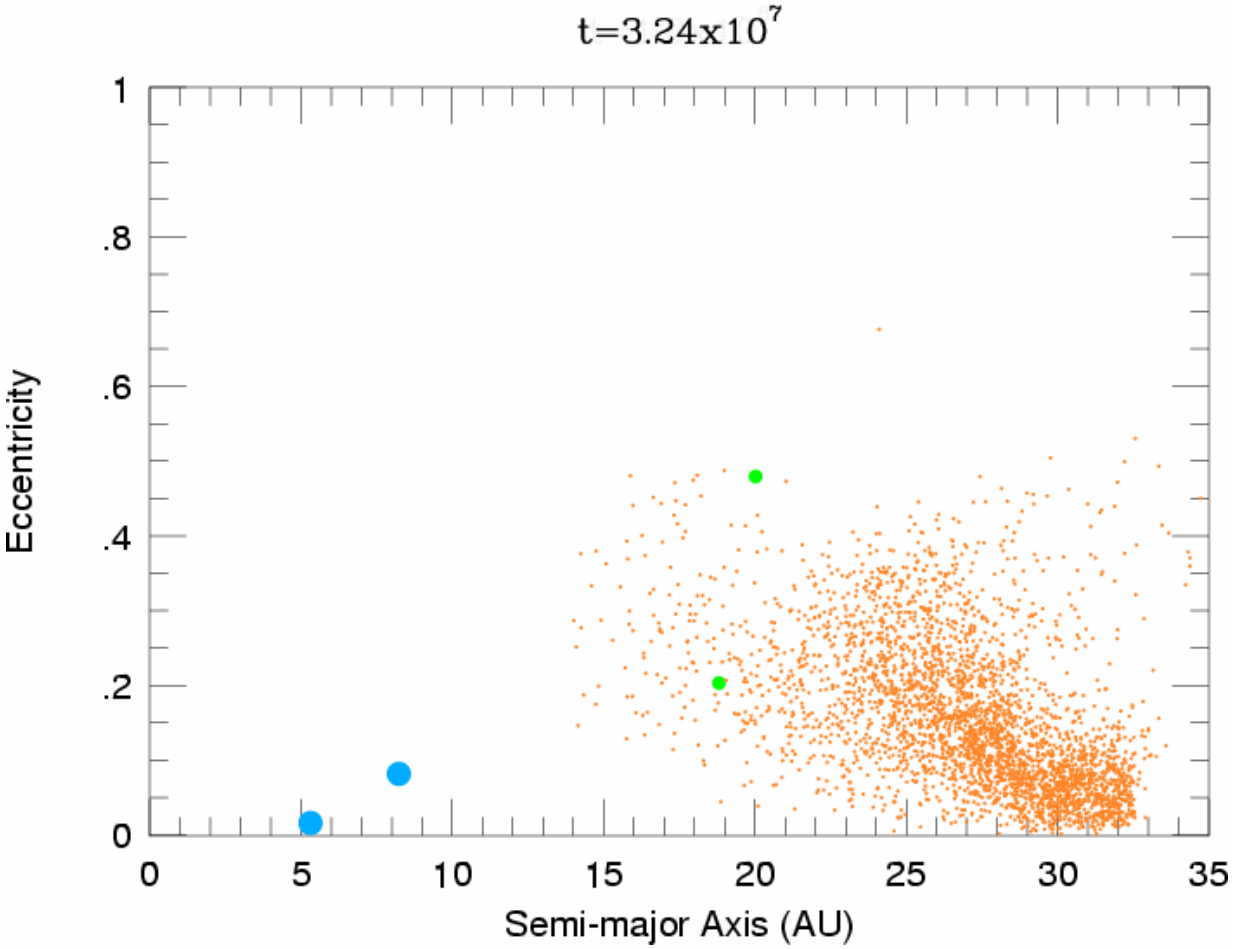
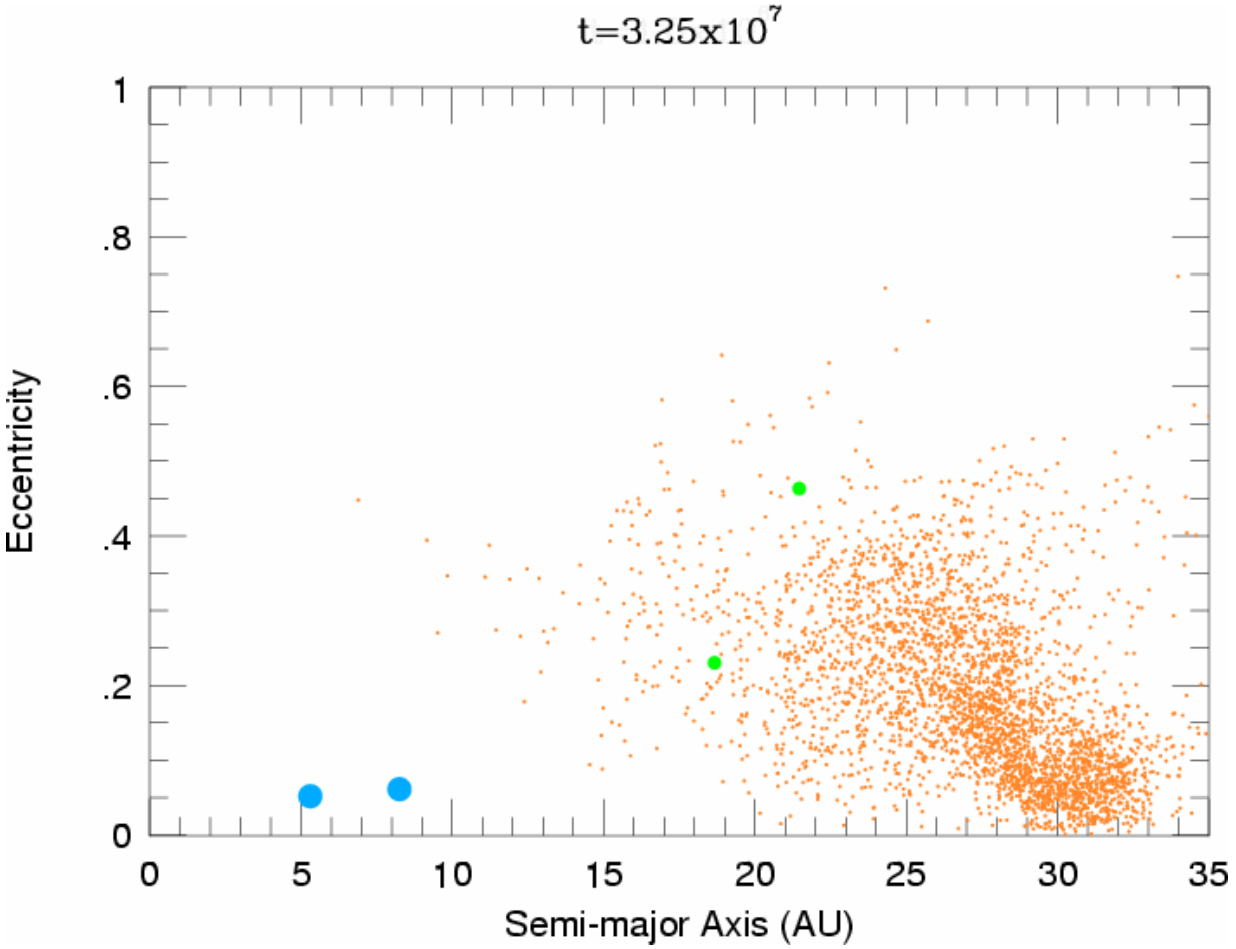


Kuiper belt 2.0



Kuiper belt 2.0



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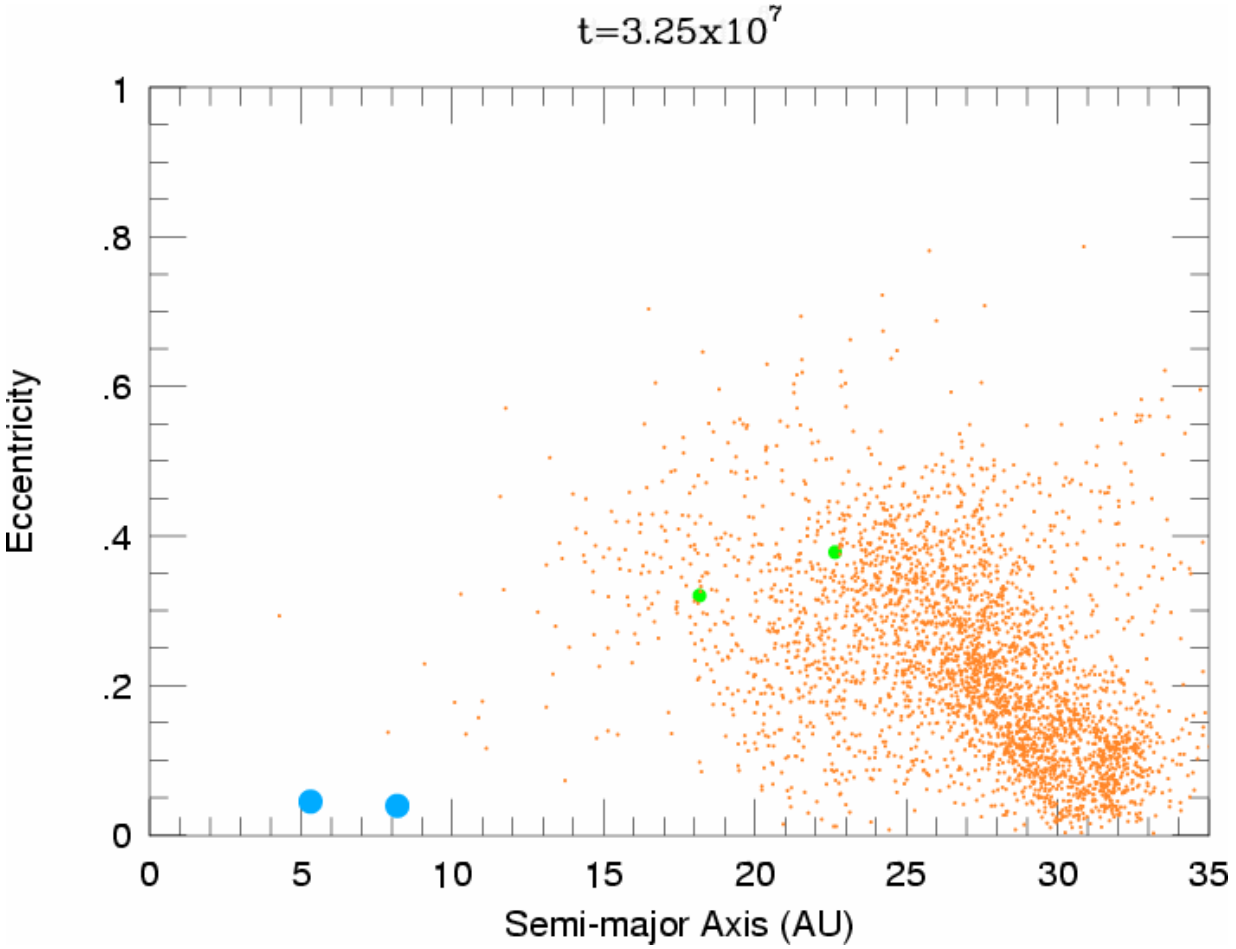

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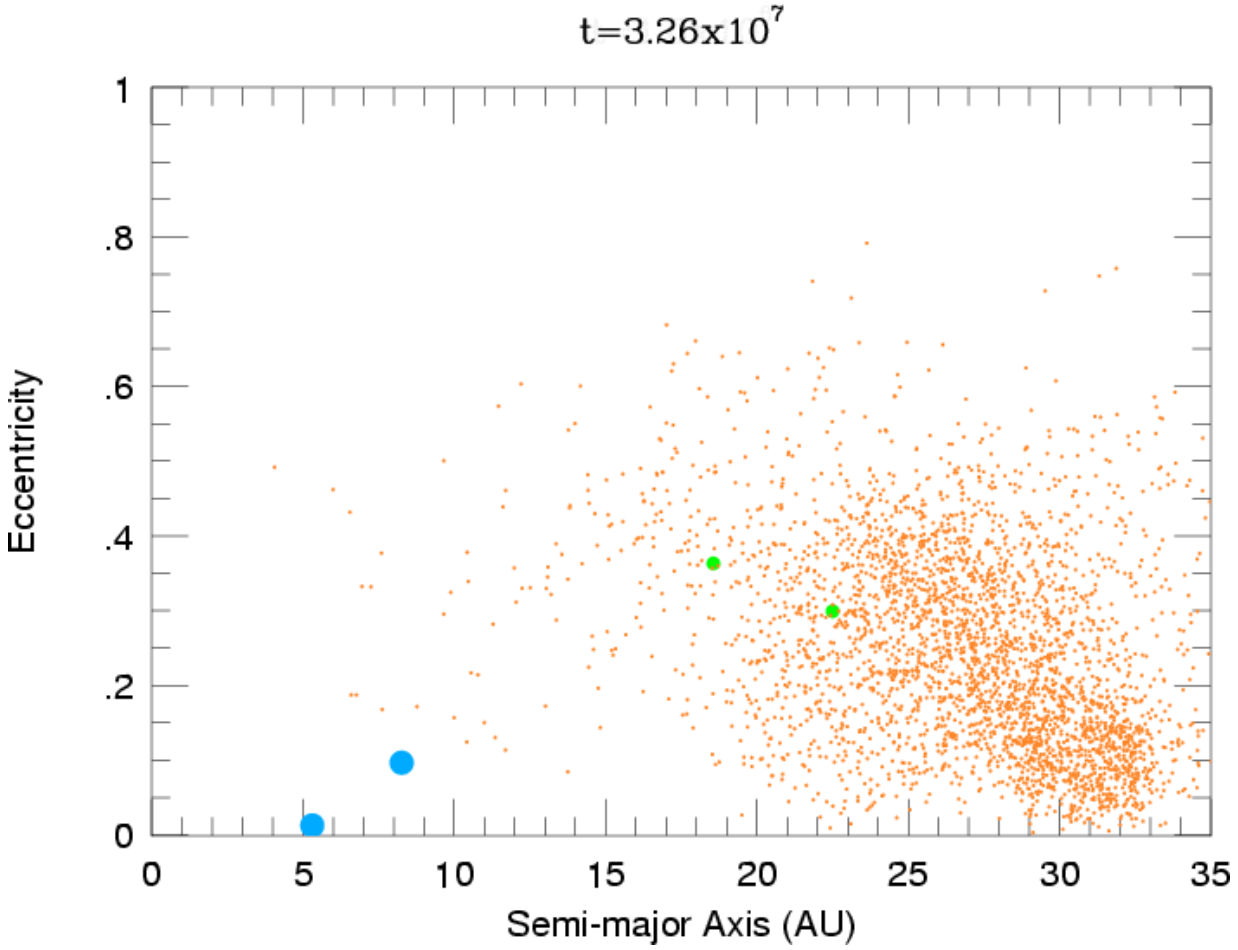

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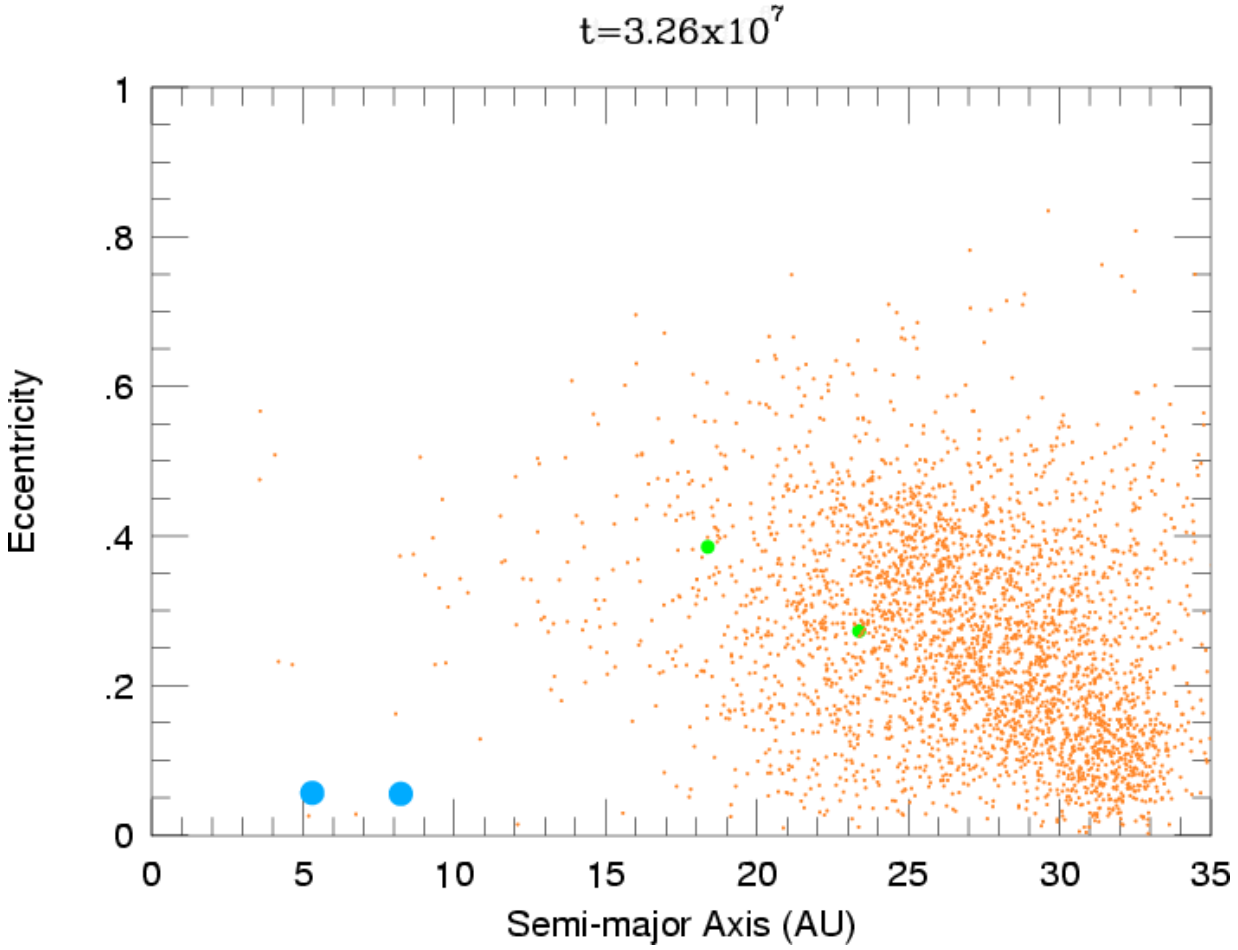
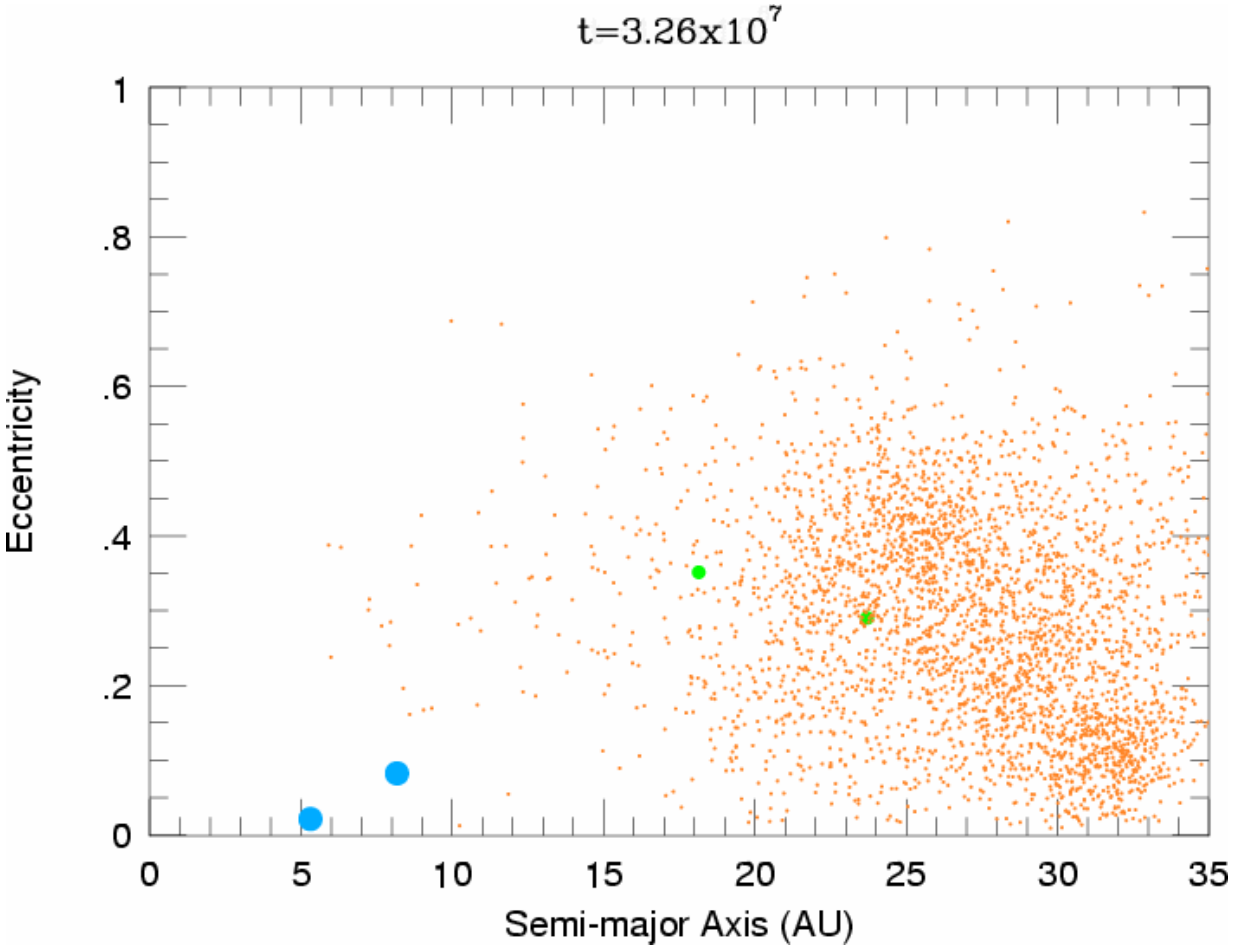
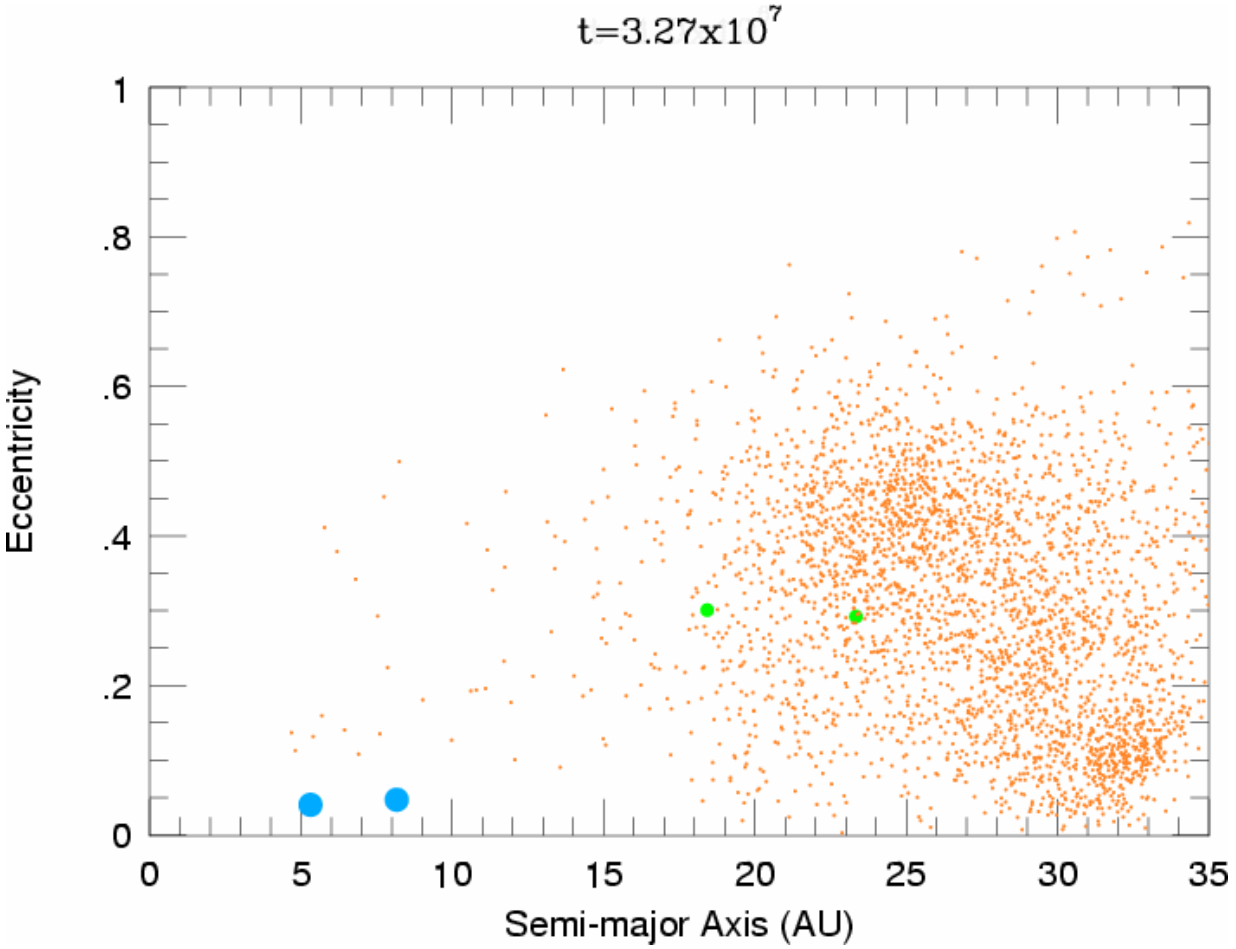


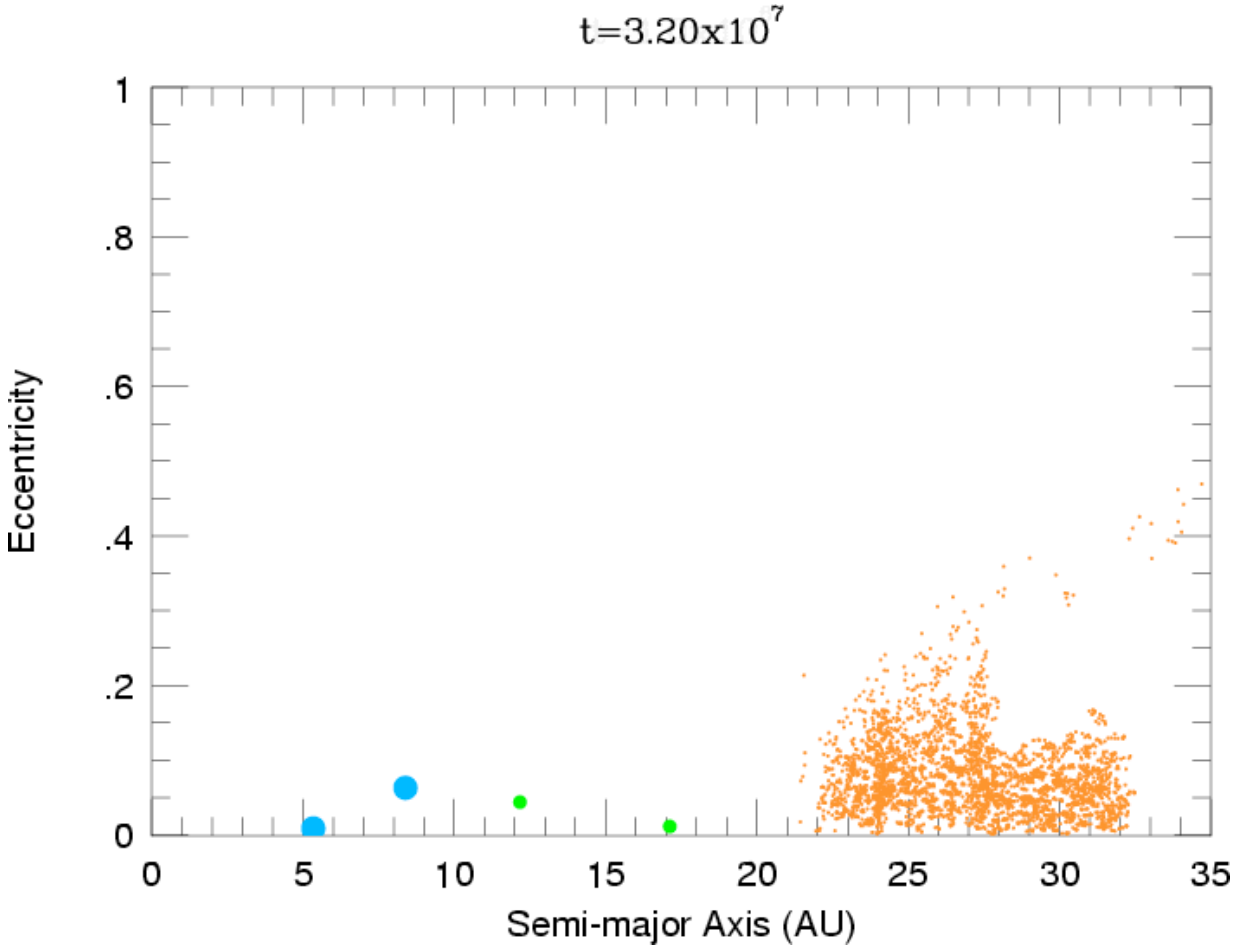
Kuiper belt 2.0



Kuiper belt 2.0

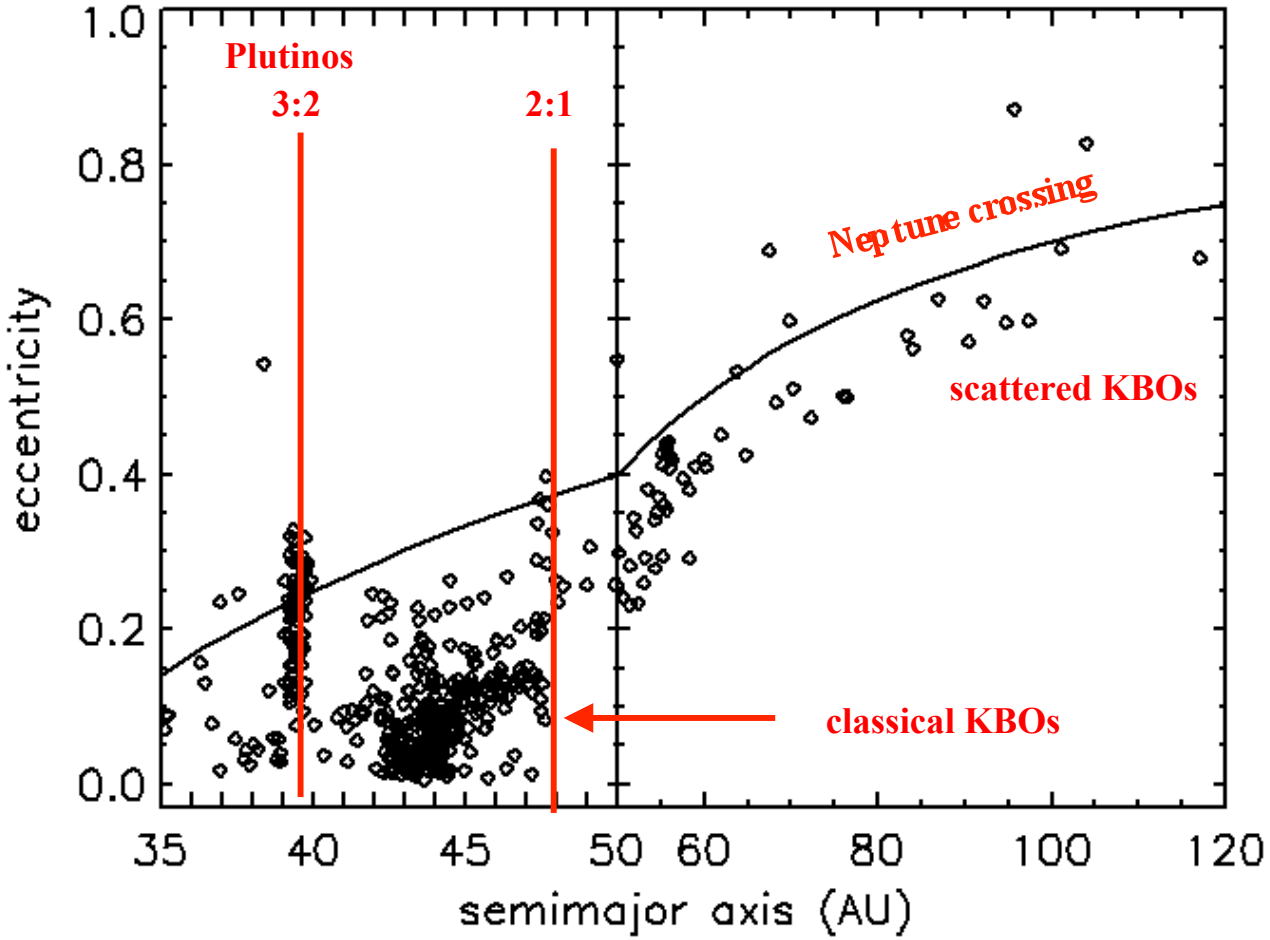


Kuiper belt 2.0



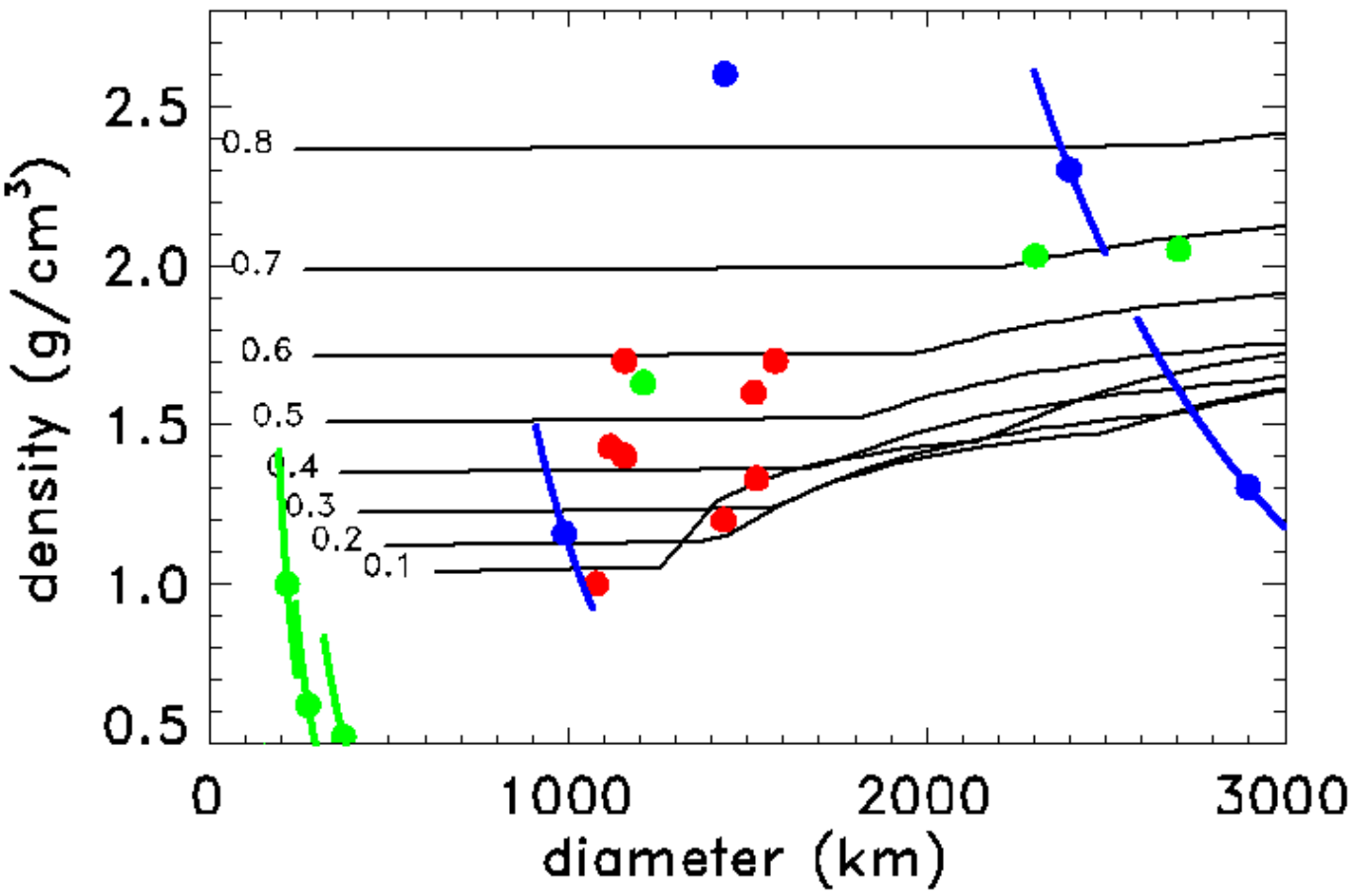
- Dust 2.0

Kuiper belt 2.0 uhoh



Kuiper belt 2.0 uh oh

- Haumea
- Cold classicals are too weird
- Ice/rock fractions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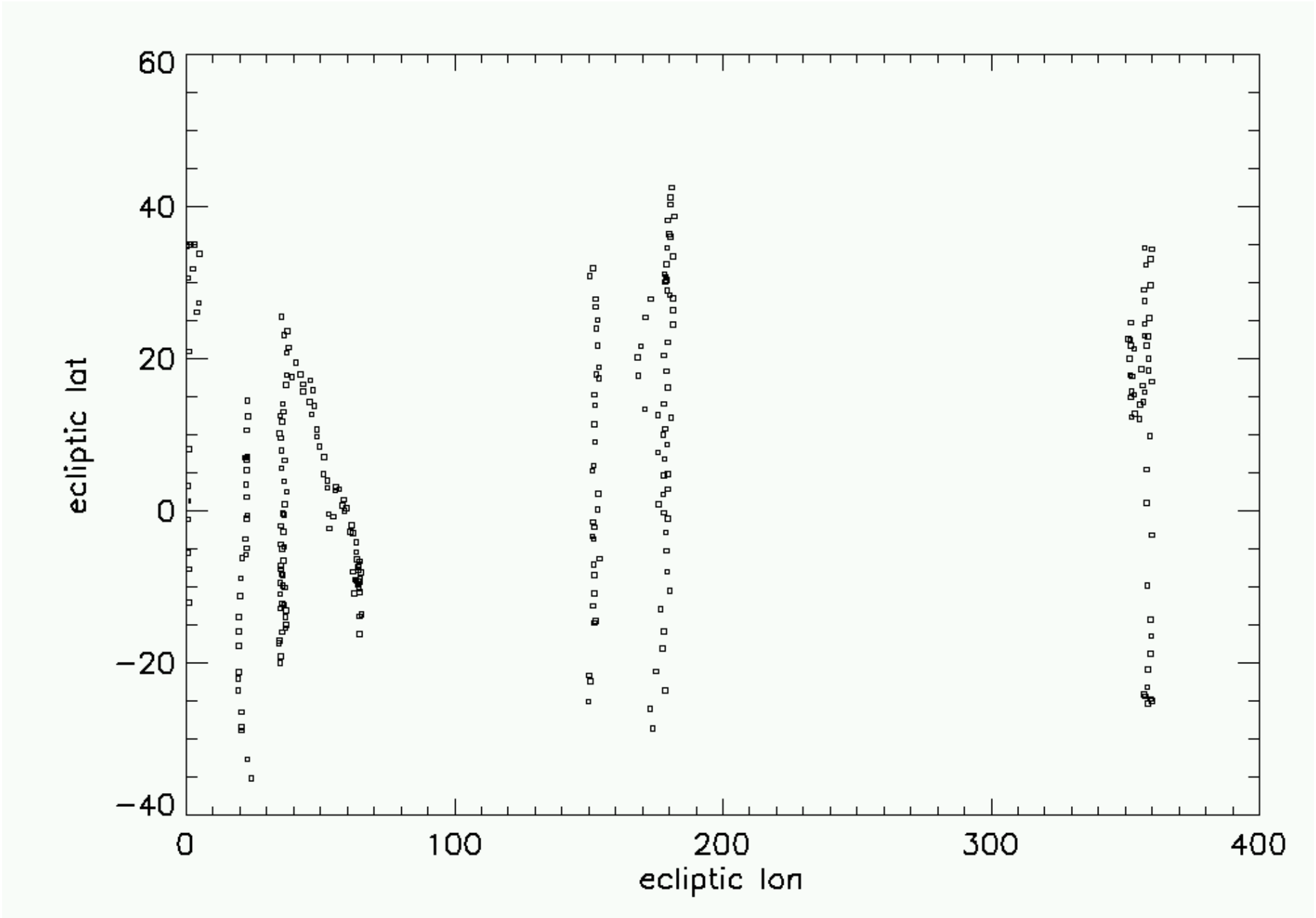
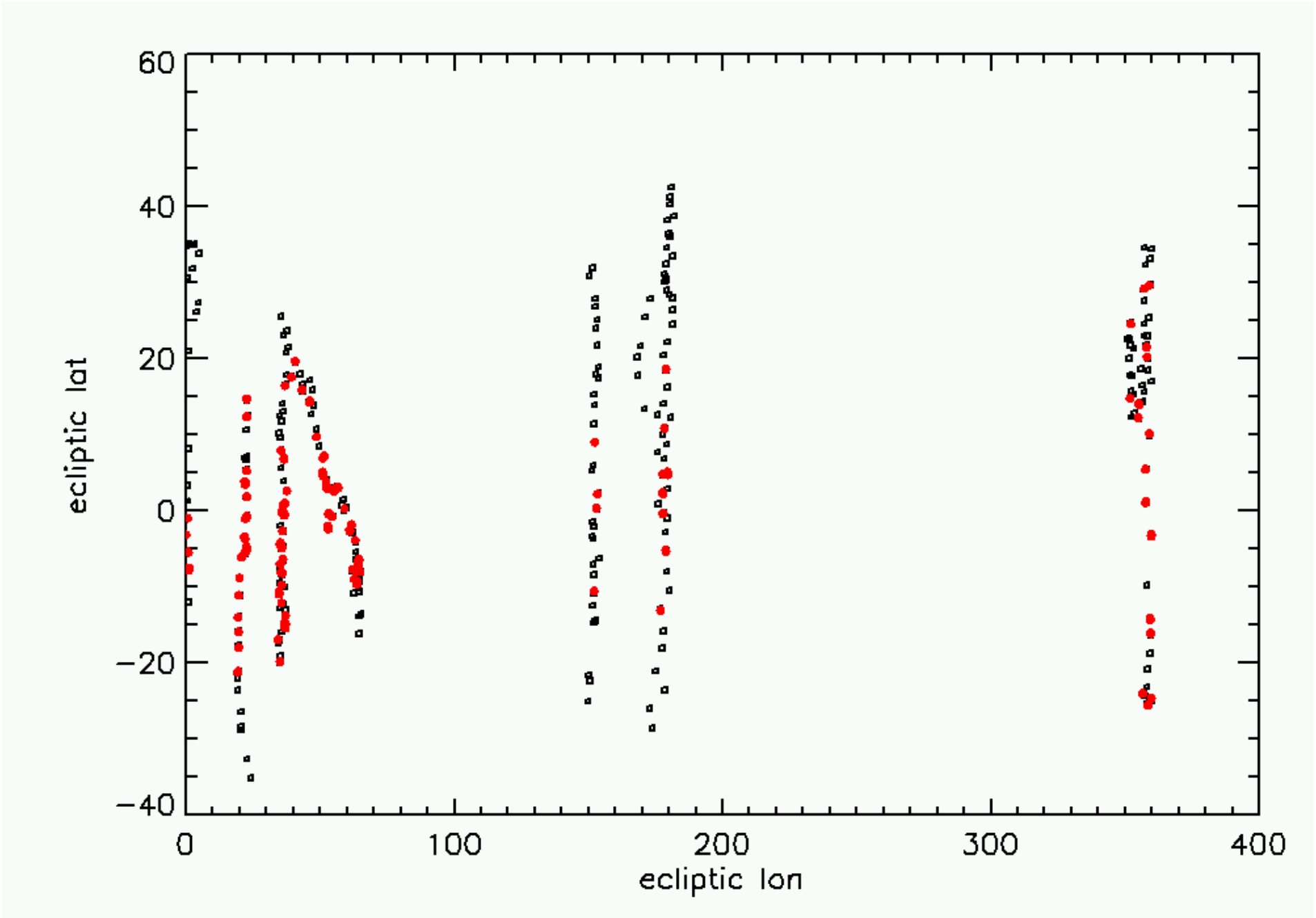
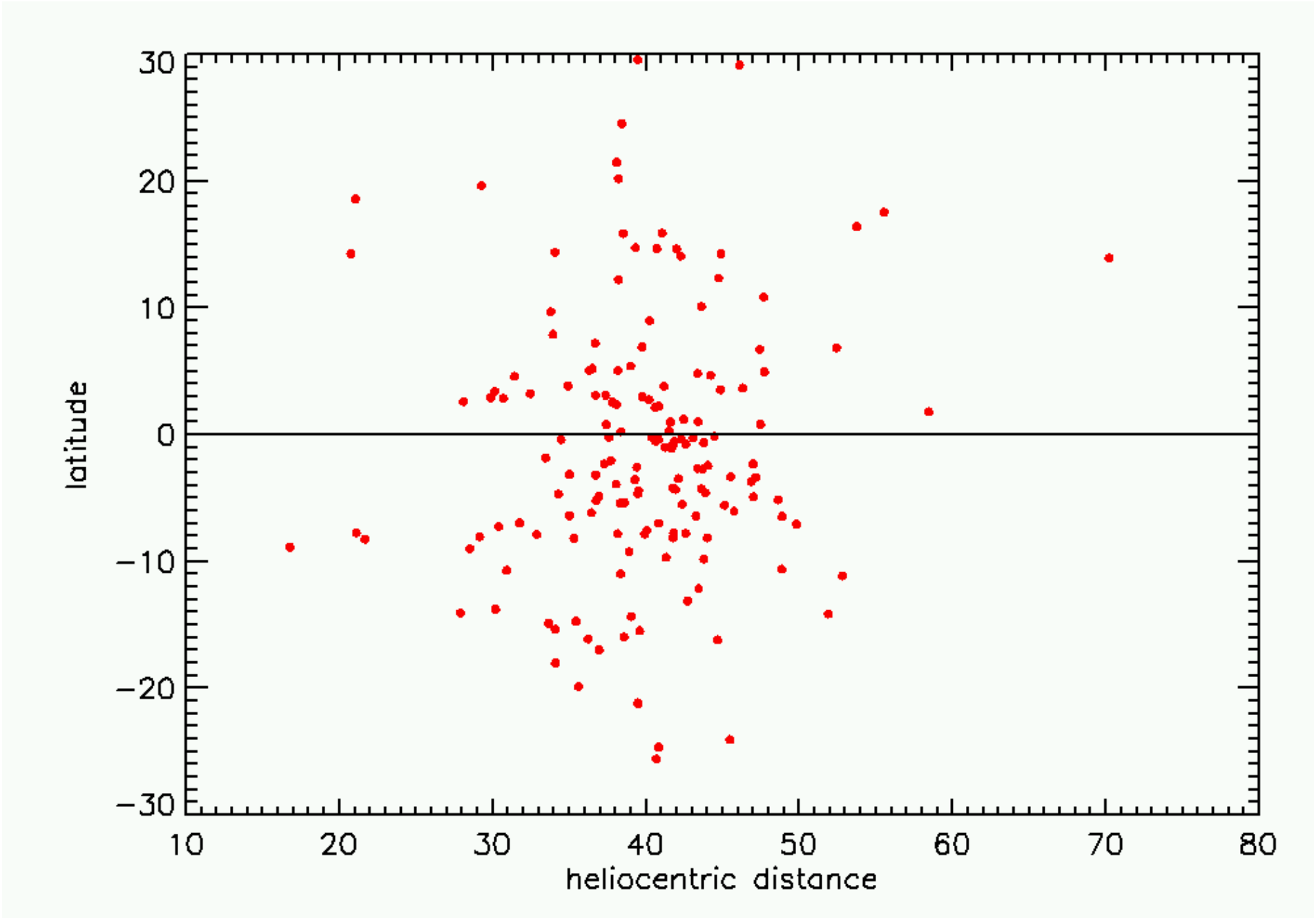
2.5
2.0
1.5
1.0
0.5
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
1000
2000
3000
diameter (km)


60
40
20
0
−20
−40
ecliptic lat
0
100
200
300
400
ecliptic lon


60
40
20
0
−20
−40
ecliptic lat
0
100
200
300
400
ecliptic lon


30
20
10
0
−10
−20
−30
latitude
10
20
30
40
50
60
70
80
heliocentric distance

Kuiper belt 3.0, beta

- Need to throw away: collision models, accretion models.
- i.e., all of the input into dust models