WHAT DO COMETS 252P/LINEAR & P/2016 BA14 HAVE IN COMMON?

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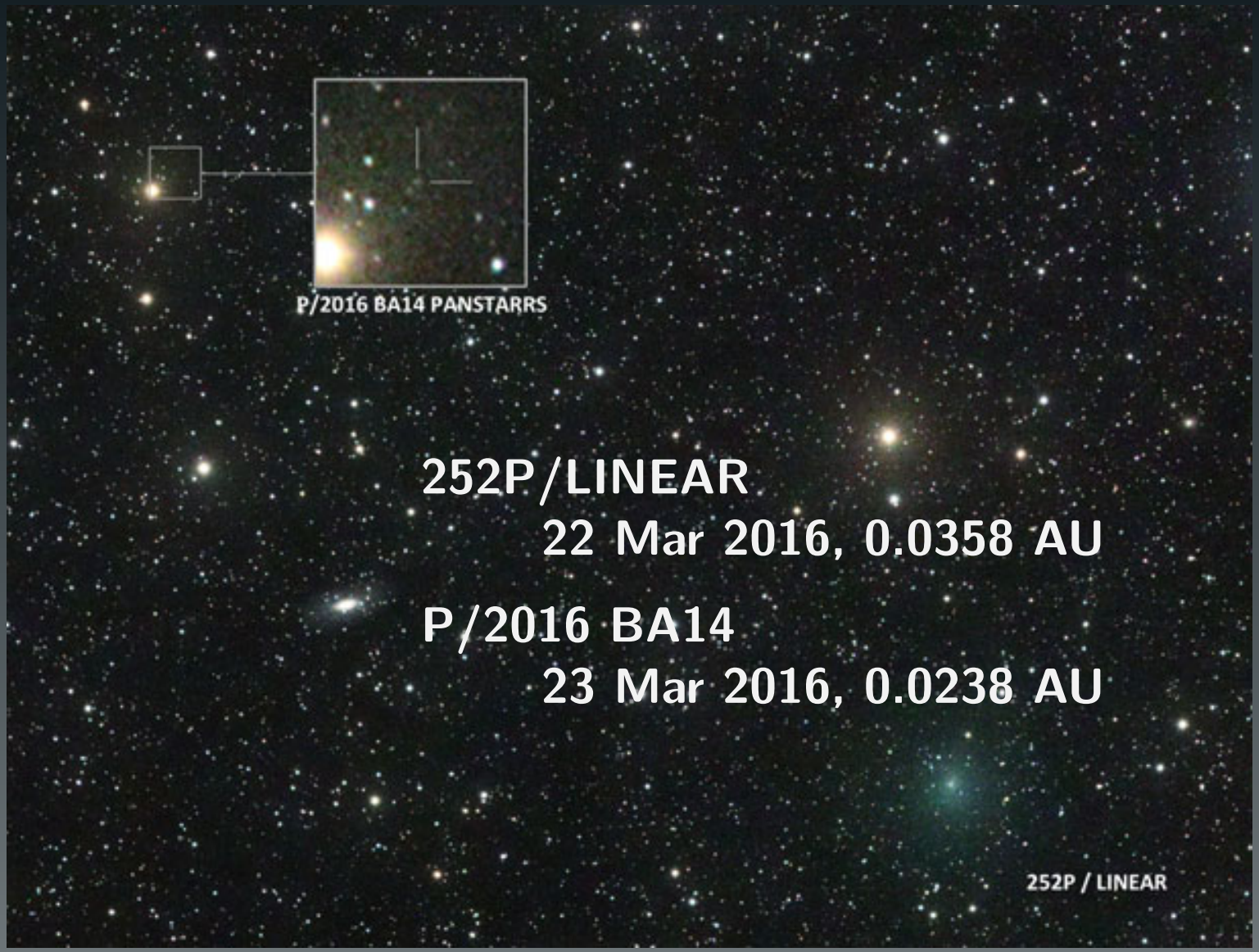
06-10 June 2016

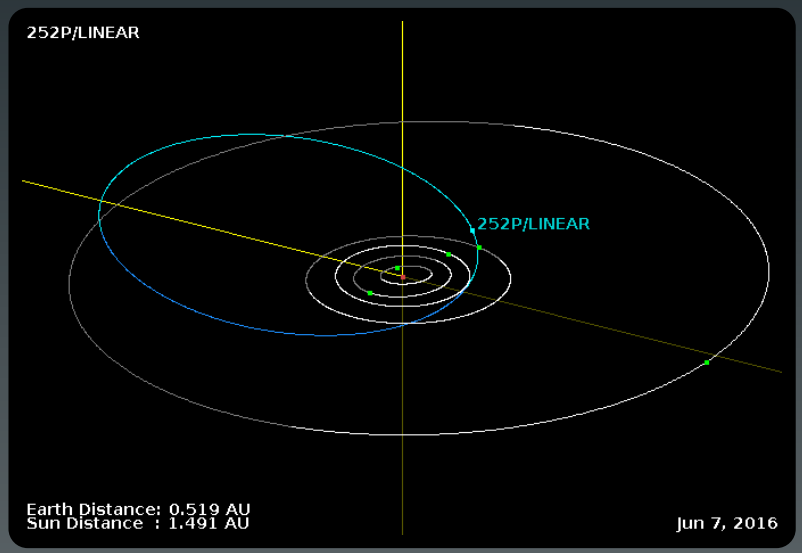
A Lot?

252P/LINEAR vs. P/2016 BA14

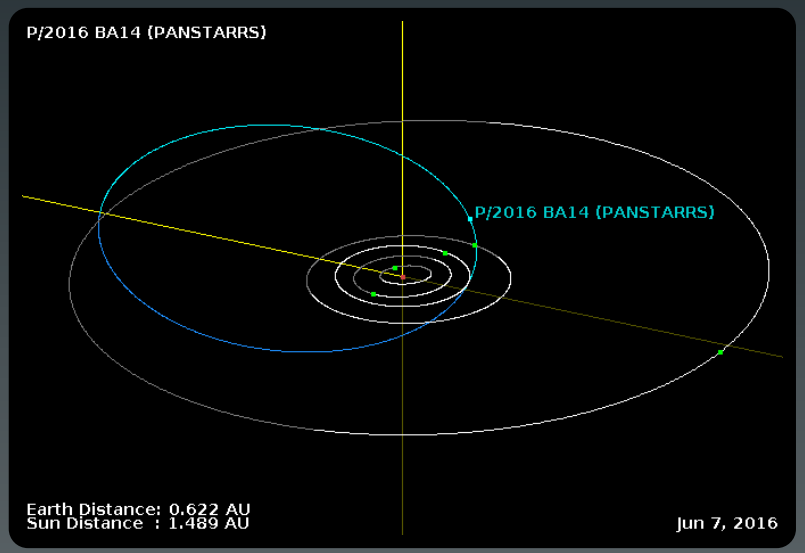


252P/LINEAR vs. P/2016 BA14

- Jupiter-family Comet
- $\mathrm{d} = 0.6$ km
- $\mathrm{T_J} = 2.820$
- MOID $= 0.012$ AU

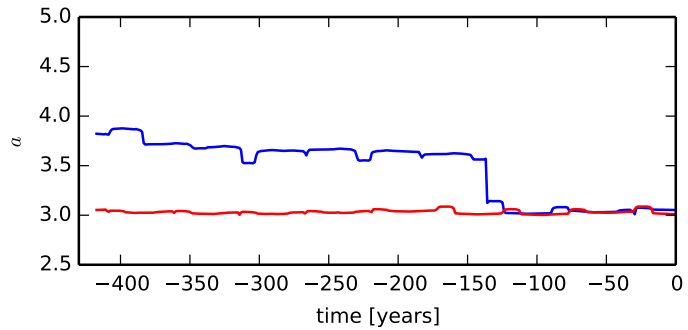


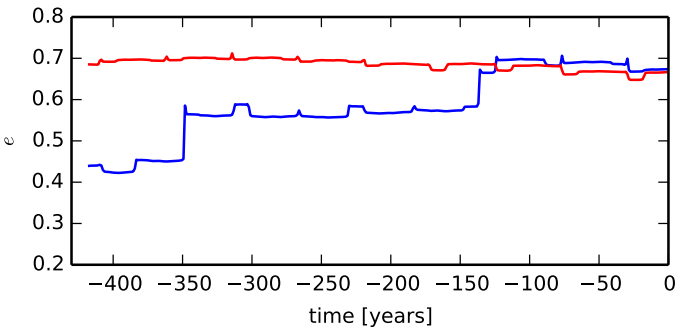
- Jupiter-family Comet
- $\mathrm{d} = 0.2$ km
- $\mathrm{T_J} = 2.797$
- MOID $= 0.016$ AU

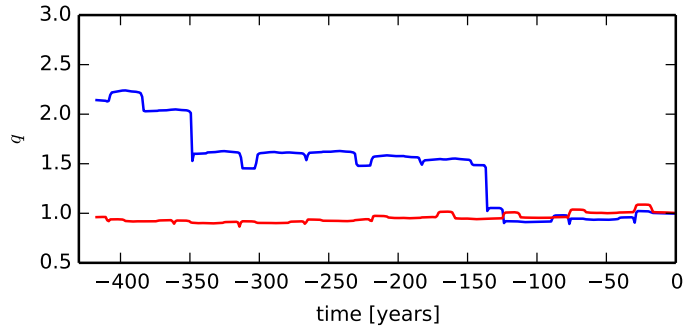


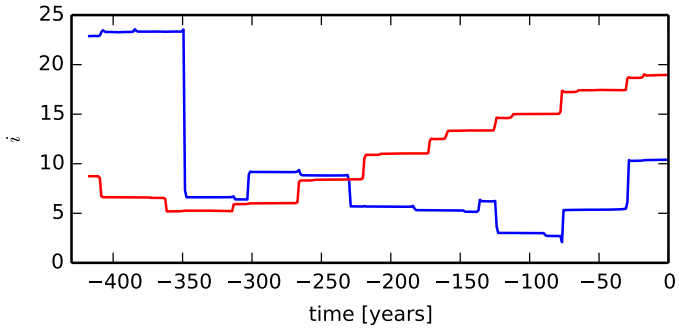
	a [AU]	e	i [°]	ω [°]	Ω [°]
252P/LINEAR	3.0486	0.67327	10.42	343.31	190.95
2016 BA14	3.0225	0.66631	18.92	351.89	180.53

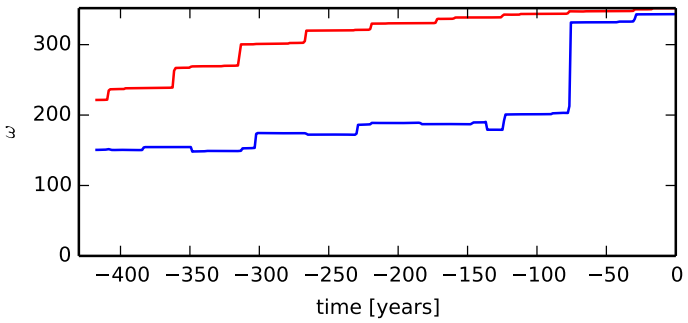
252P/LINEAR vs. P/2016 BA14

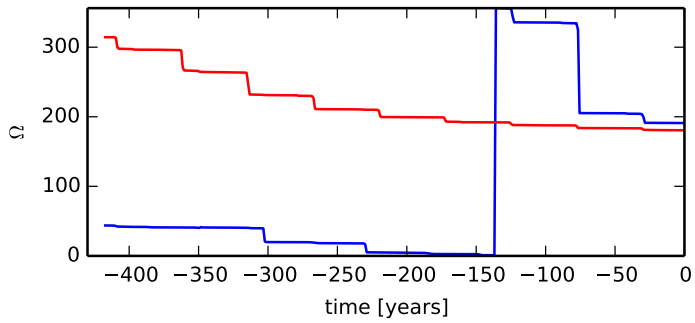






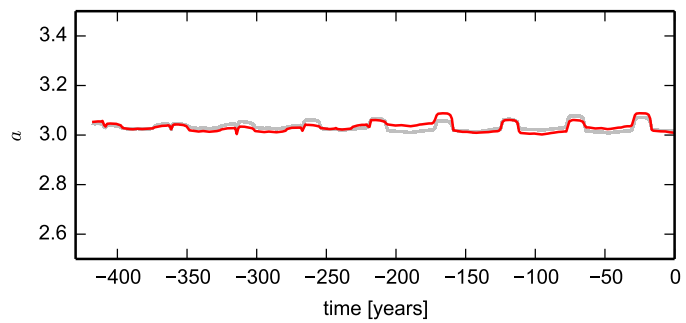


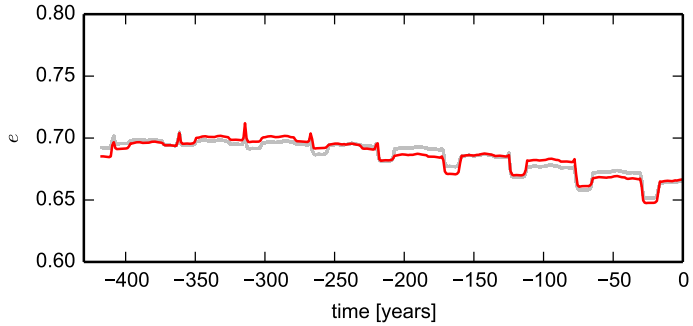


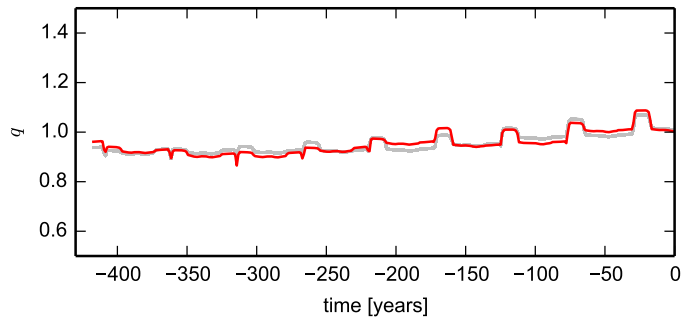


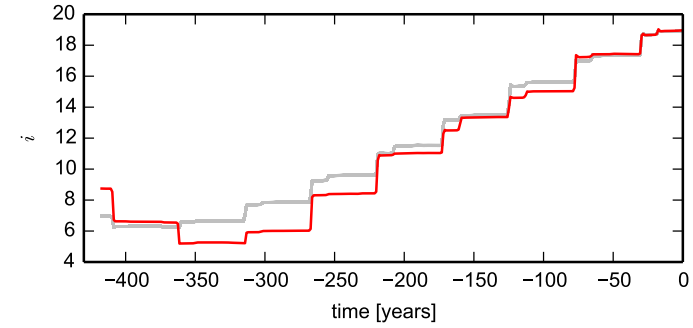
252P/LINEAR vs. P/2016 BA14

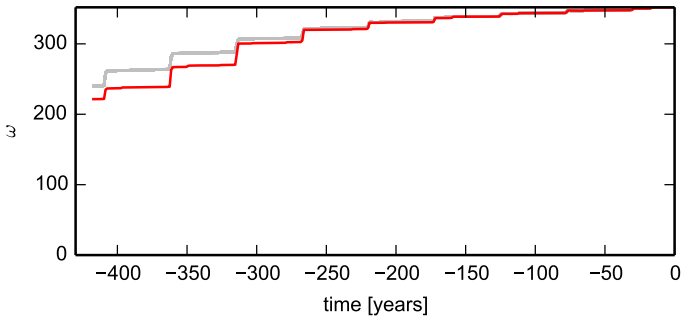
P/2016 BA14 and clones

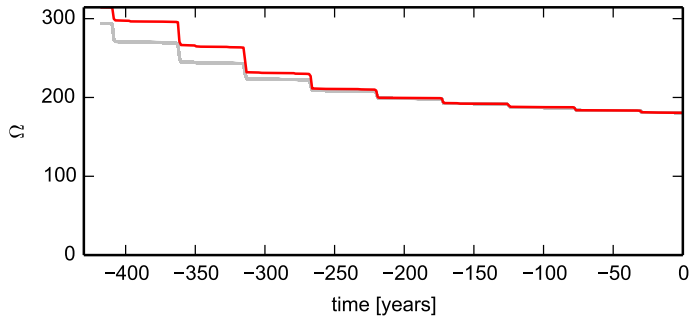










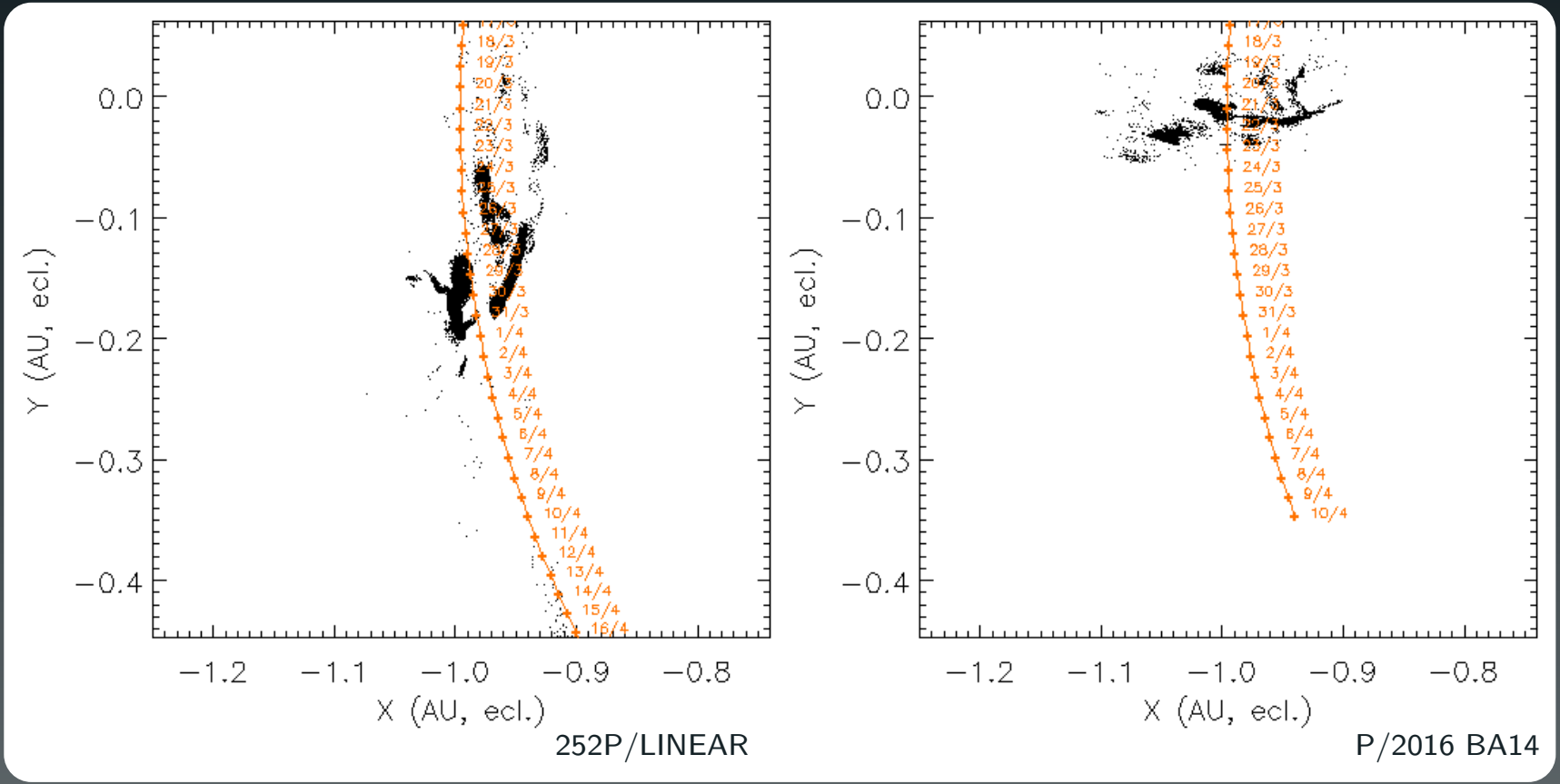


Meteoroid stream modelling

- The model:
  taken from Vaubaillon et al. (2005)
- The orbital elements and physical properties:
  taken from JPL horizons website
- The ejections:
  between 1700 A.D. and 2016 A.D.
  between 1704 A.D. and 2016 A.D.
- The orbits integrated to 2075.

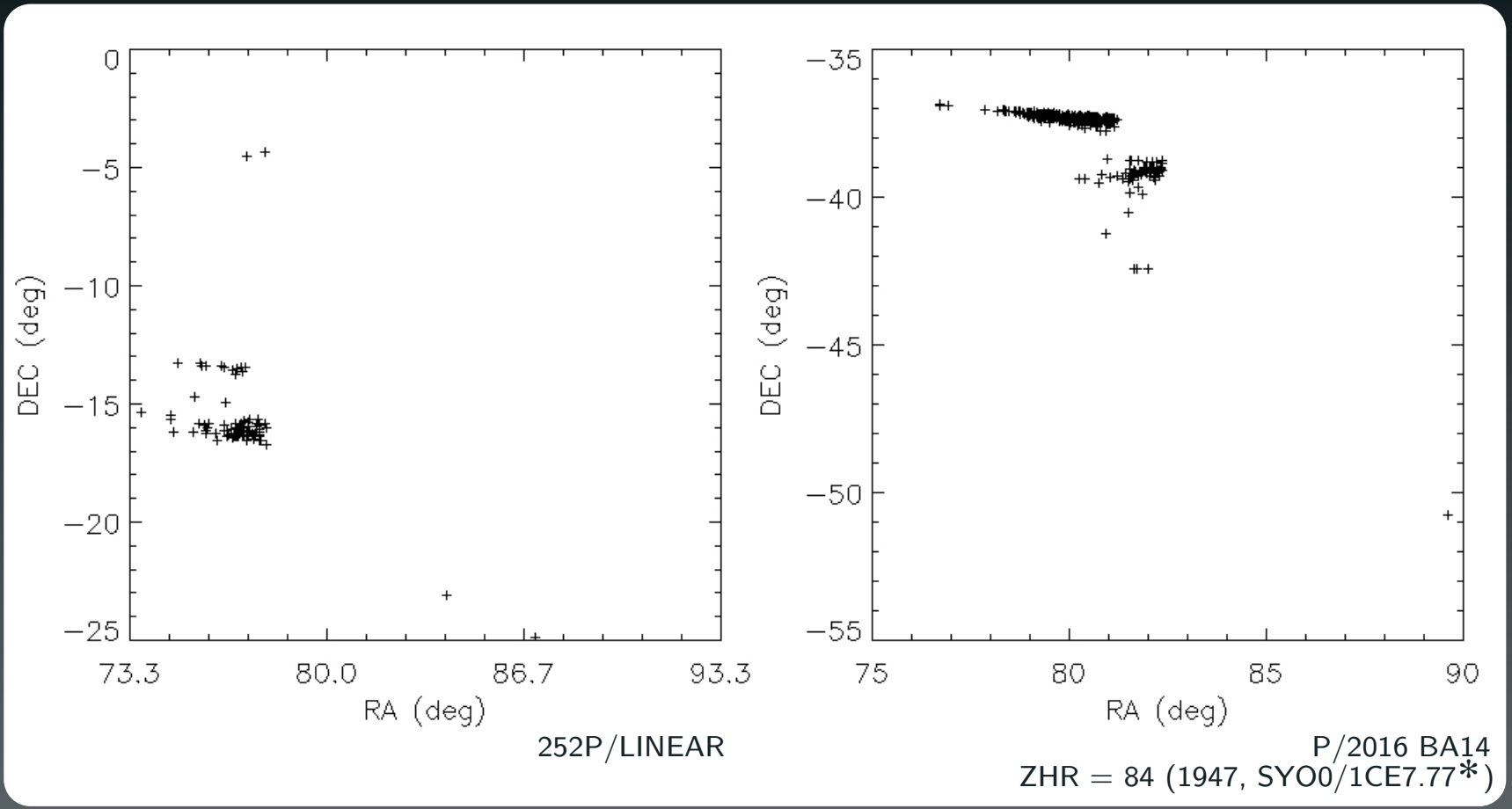
Vaubaillon, J., Colas, F. & Jorda, L. (2005), Astronomy and Astrophysics, 439, 751

252P/LINEAR vs. P/2016 BA14



Positions of generated meteor shower observed in 2016.

252P/LINEAR vs. P/2016 BA14



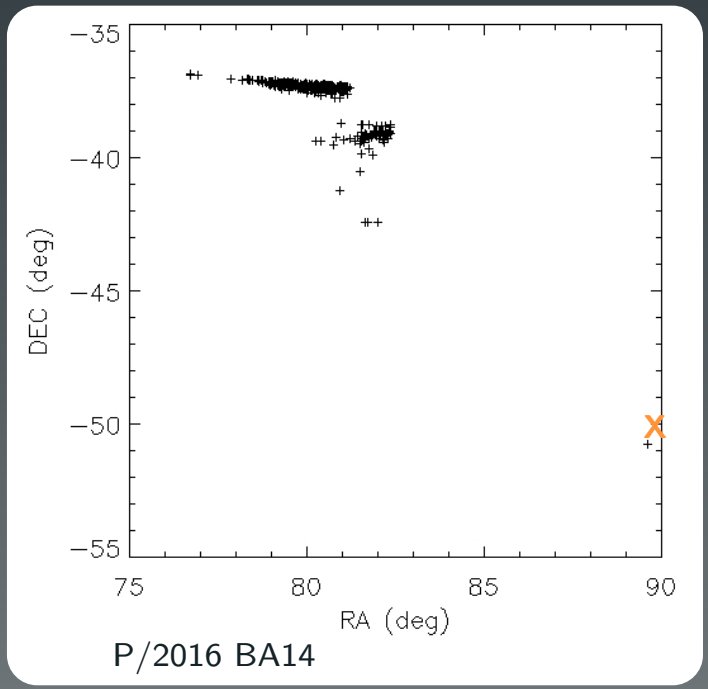
Concatenated positions of the theoretical radiants of the generated meteoroid streams.

*Vaubaillon, J., *A confidence index for the forecasting of the meteor showers* (talk)

Observations in 2016?

	a [AU]	e	i [°]	ω [°]	Ω [°]
252P/LINEAR	3.0486	0.67327	10.42	343.31	190.95
2016 BA14	3.0225	0.66631	18.92	351.89	180.53
*AMOS-CH01052016	2.7622	0.64708	28.52	336.52	220.91

*Toth et al., *Taurids 2015 – spectra and structure diversity by AMOS* (talk)



P/2016 BA14

- 01 May 2016
  01:54:56.52 UTC
- RA = 89.77°
  DEC = –49.91°
  V_g = 19.0 [km/s]

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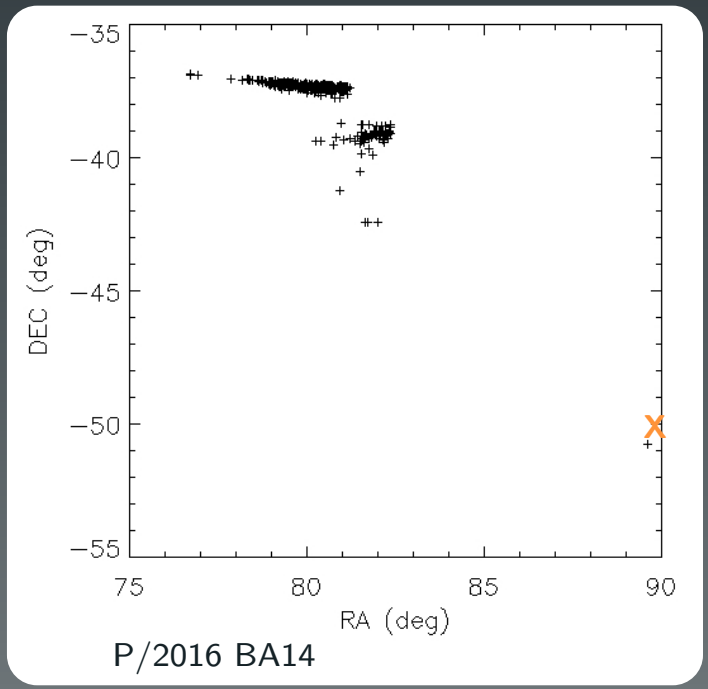

P/2016 BA14

~~- 01 May 2016~~
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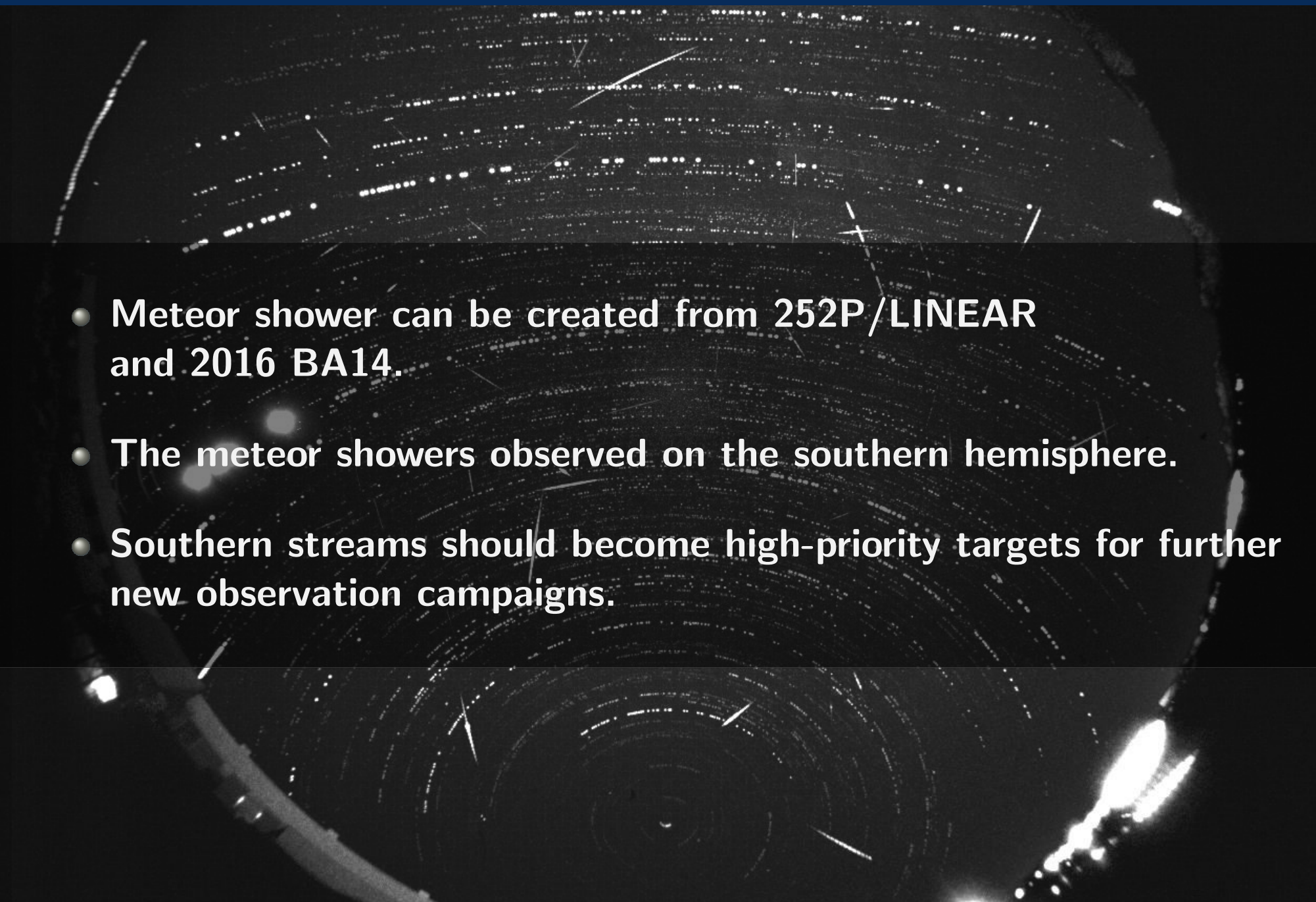
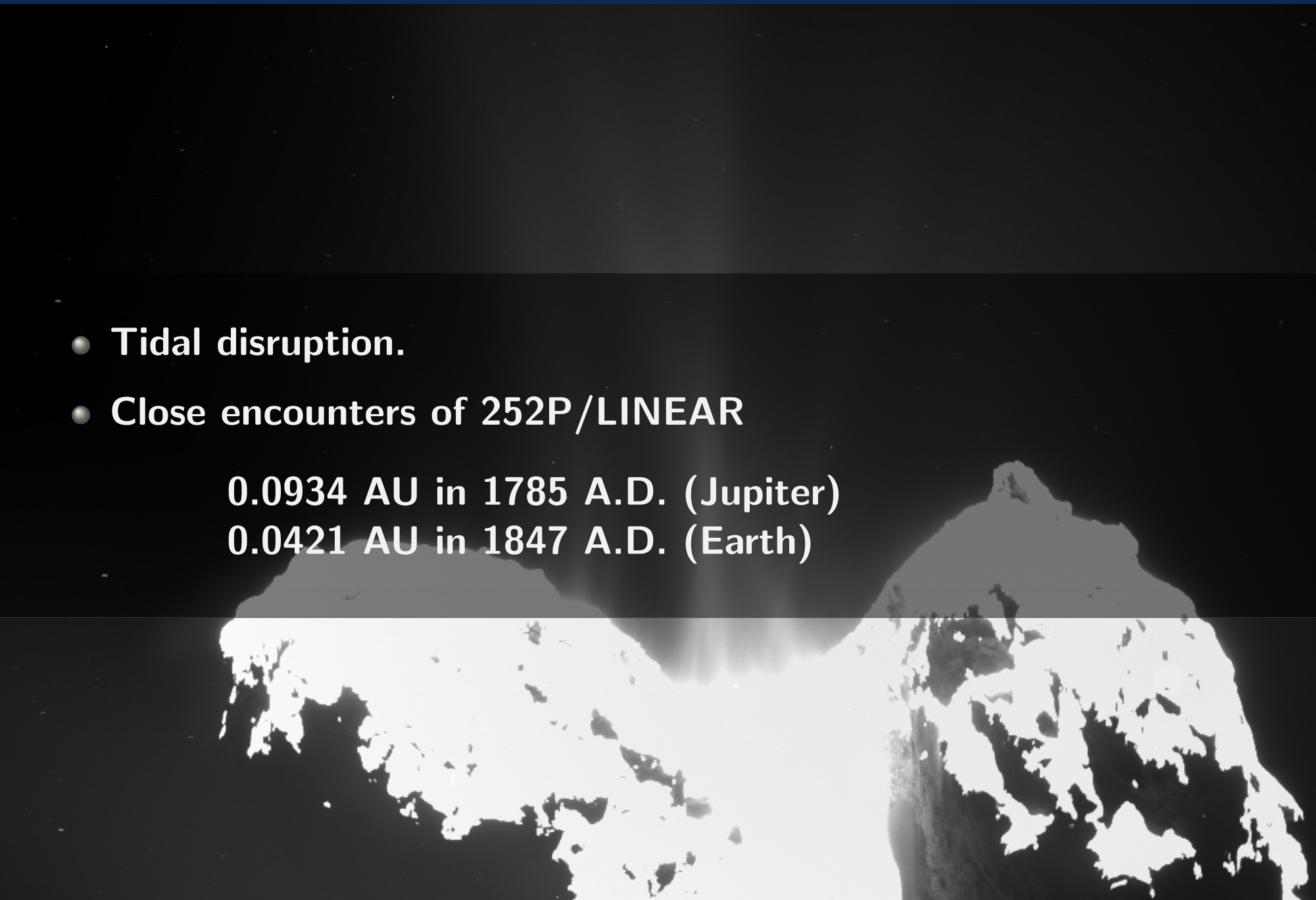
Conclusions



- Meteor shower can be created from 252P/LINEAR and 2016 BA14.
- The meteor showers observed on the southern hemisphere.
- Southern streams should become high-priority targets for further new observation campaigns.



- **Tidal disruption.**
- **Close encounters of 252P/LINEAR**

  0.0934 AU in 1785 A.D. (Jupiter)
  0.0421 AU in 1847 A.D. (Earth)

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Thank You
For Your Attention!