

# → CAFS FOR 2023 RS

## ESA's NEO Coordination Centre

### Close approach fact sheet for asteroid 2023 RS

The very small asteroid 2023 RS (previously reported with temporary observer ID C9FMVU2) had a close encounter with Earth on 07 September 2023. The estimated impact probability was: 0

Fly-by date	2023-09-07
Closest approach time	14:24:58 UTC ( $\pm 1$ s)
Fly-by distance from Earth surface	4005 km, 0.01 Lunar Distances ( $\pm 5$ km)
Fly-by speed	13.6 km/s
Size range	0.9-2 m
Discovery date	2023-09-07
Discovery site	Mt. Lemmon Survey

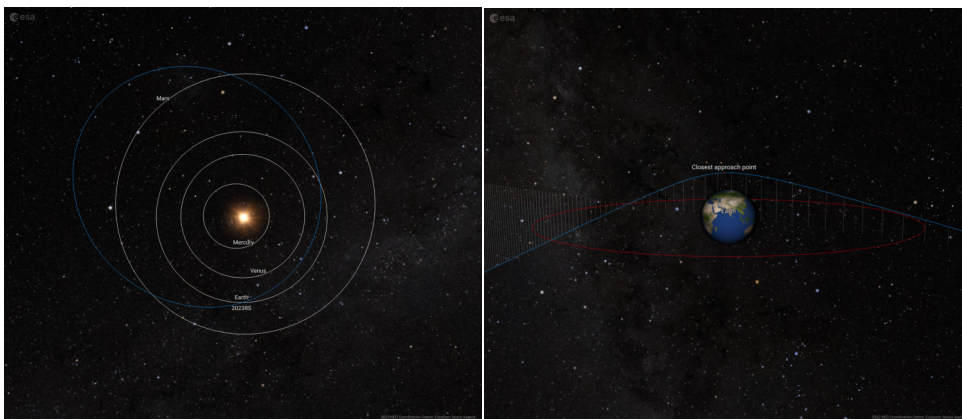
All error bars quoted in this table correspond to one standard deviation.

### Orbit information

As the approach distance of the nominal trajectory to the Earth is relatively small, changes in its orbital elements due to the Earth gravity are noticeable.

Date before and after fly-by	Orbital period (year/day)	Aphelion distance (au)	Perihelion distance (au)	Eccentricity	Inclination (deg)
2023-08-08	2.309/843	2.606	0.888	0.492	1.031
2023-10-07	1.045/381	2.051	0.887	0.045	9.998

All orbital elements in this table are referred to the ecliptic at the epoch of J2000.0



In image to the left, the orbit is reported – showing how it will be affected by the close flyby. In image to the right, the flyby trajectory (blue line) and a geostationary orbit (red line) are visualised. N.B.: the size of the object has been magnified.

## Physical and mitigation information

Days to closest approach	Cumulative impact probability	Composition	Rotation period (hours)
0	Not applicable	Unknown	Unknown

## Observational information

Peak brightness	Visual observability	Geometric observability
14.2	Professional Telescopes	Observable from most of the globe (where dark) during the incoming approach, but only from the Northern hemisphere right before and during closest approach. Unobservable due to low elongation afterwards.

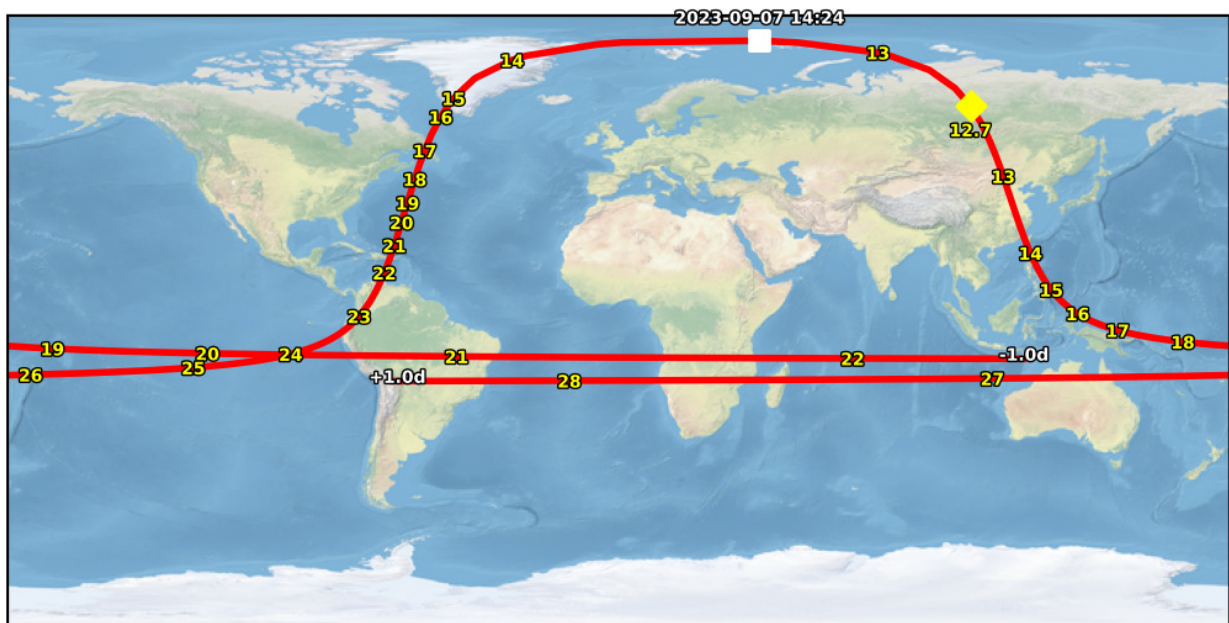
## Other information

Encounter peculiarities	Previous encounter	Next encounter
None	2016-12-15	None

Only encounters within 0.05 au are considered.

## Asteroid ground track

The object is approaching from near the Equator. A few hours before close approach, it will fly over South-East Asia, reaching its peak brightness over Eastern Russia. Closest approach will happen over the Arctic ocean, not far from the Svalbard archipelago. The object will then head away towards the direction of the Sun, becoming unobservable.



## Links

### NEO information:

<https://neo.ssa.esa.int/search-for-asteroids?sum=1&des=2023RS>

### Orbit visualiser:

<https://neotools.ssa.esa.int/ovt?object=2023RS>

### Close approaches page:

<https://neo.ssa.esa.int/close-approaches>

[neo.ssa.esa.int](https://neo.ssa.esa.int)

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