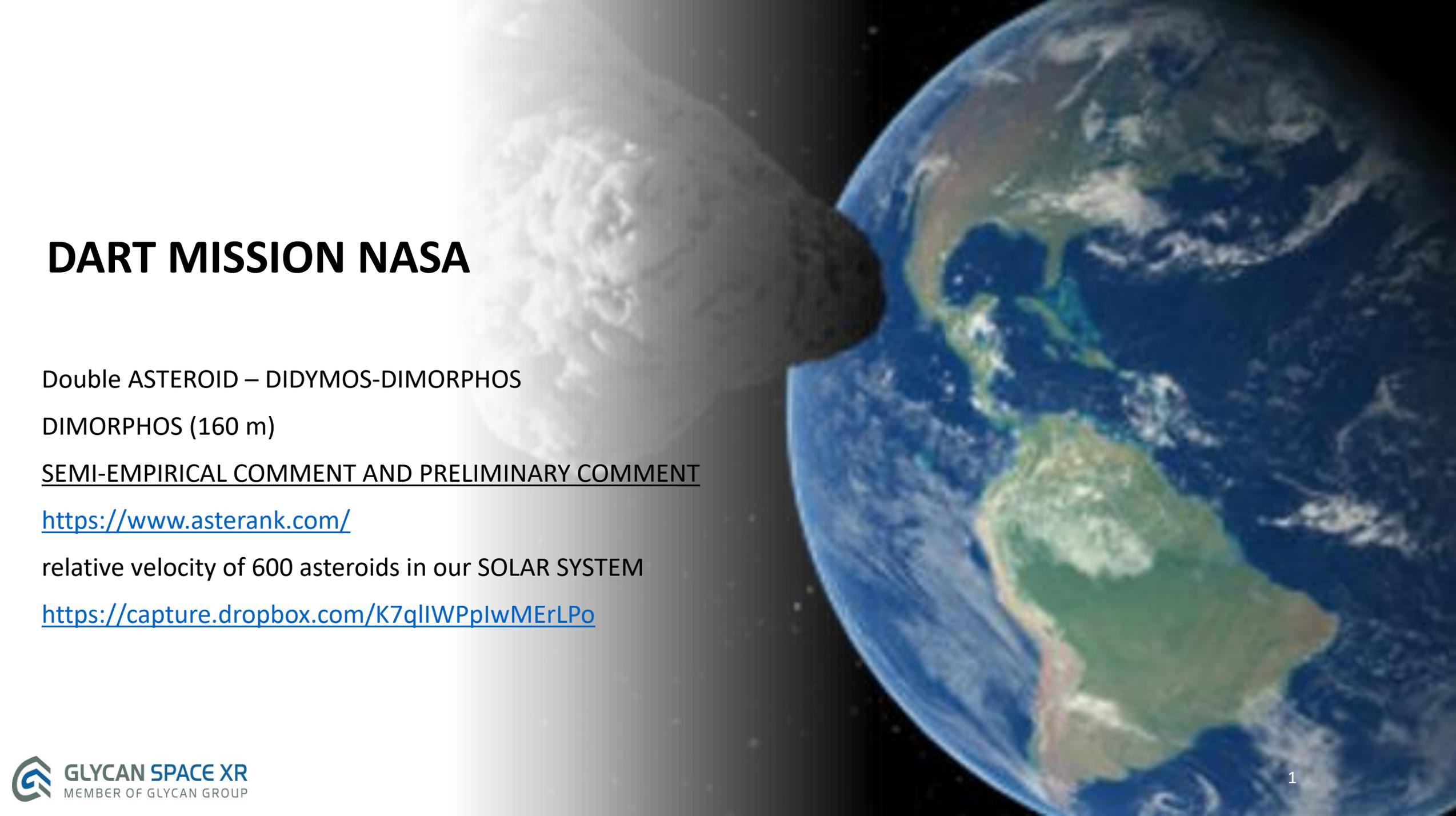


DART MISSION NASA



Double ASTEROID – DIDYMOS-DIMORPHOS

DIMORPHOS (160 m)

SEMI-EMPIRICAL COMMENT AND PRELIMINARY COMMENT

<https://www.asterank.com/>

relative velocity of 600 asteroids in our SOLAR SYSTEM

<https://capture.dropbox.com/K7qIIWPplwMErLPo>

<https://www.sandia.gov/media/NewsRel/NR2001/flyer.htm>

SANDIA LABS might be the more qualified to set up this type of experiment for DIMORPHOS or others devices in order to prevent DEEP IMPACT menace.

<https://glycanspacexr-agency.com/plasma-shield-technologies/>

The NASA choice is for DIMORPHOS at 6.6 kms-1 relative velocity.

The payload in order to shock selectively the DIMORPHOS asteroid (160 m) has been evaluated at 500 kg , the information disclosed indicates Aluminium-Titanium- others (Silicon)-rare gases- SATELLITE COMPOSITION.

COMMENT

In order to establish the basic operators in the Radiative Transfer and Kinetics we must have a laboratory model (as well as SANDIA) corresponding at reduced scale, the phenomenon produced between the payload and the ASTEROID DIMORPHOS.

We will not discuss the effects of one part of the kinetics transferred on the mass center.

We will discuss briefly only the creation of several plasmas (LTE-NLTE-PLTE) at impact.

Imbalanced status between Kinetics approx 6.6 km/s to (13 -20 km/s) and Radiative transfer at impact. **(SANDIA source) Z machine.**

Operators engaged in the impact.

MAJOR OPERATOR

KINETICS $E = \frac{1}{2} mv^2$

COLLATERAL OPERATOR (QUANTUM view)

$E_v = \frac{3}{2} kT$, $p = \hbar k$

Radiative transfer (generated by radiative pressure) the coef 3/2 have to be considered in the Hamiltonian conditions :

$$H|\psi\rangle = E|\psi\rangle$$
$$-\frac{\hbar^2}{2m} \Delta\psi(\vec{r}, t) + V(\vec{r})\psi(\vec{r}, t) = i\hbar \frac{\partial\psi(\vec{r}, t)}{\partial t}$$

V(x) in the Schrödinger formula is not discussed

RADIATIVE PRESSURE

$$P=2Ic$$

The discussion is quite difficult TILL no experiment has been done on EARTH in order to have a correct simulation of the impact coming from the satellite projectile-bullet-similar of 500 kg.

The major difficulty coming from the nature of the components of the experiment (in deep space) low boiling point.

The main advantage is the permanent presence of high vacuum , the absence of atmosphere(N₂,O₂,CO₂..) on DIMORPHOS will be a positive factor, in order to avoid Nitrogen or Oxidative species, when the alloys of the Satellite will shock the soil of DIMORPHOS., at high velocity and therefore at high temperature, therefore the MASS is lost and transferred in salts of metals.

Therefore for the metals

The scenario might be the following:

V at 6.6 kms-1 m=500 kg

When the target is correctly acquired

SHOCK

FIRST STEP

At the distance of several millimeters the electrostatic current within 10^{-5} s existing on DIMORPHOS, will be downloaded by metallic alloys of the weapon similar (satellite), electrical discharge by influence.

SECOND STEP is the production of **ionized matter**, in fact the allied components will be heated at high temperature within 10^{-5} s to 10^{-6} s.

The ionized metals from their "assimilated ground state" (boiling point Ti, 1668 K - Al 2792 K - U 238 - 6200 K - W 5828 K to higher state associated to high temperature 13'000 K and higher.

The elements are therefore under state I, II, III, IV.

For the moment we cannot set all the ionized states using O₂, N₂, H₂ as plasma gases in this preliminary note.

The ground molecules of the (REGOLITH) or similar minerals by radiative pressure will generate WATER (H₂O) among others.

Therefore the different plasmas will be created within a within 10^{-5} s to 10^{-6} s

This radiative transfer coming from the ionization of the alloys seems detrimental to the KINETICS balance, which is more important operator in order to modify the mass center and deviate DIMORPHOS spin.

The more interesting projectile might be a future satellite or space ship load by massive DEPLETED URANIUM (BP 6200 K)

The contamination of DEEP SPACE with 500 kg or 1000 kg will be considerably limited.

This risk cannot be evaluated for the moment

Regarding the experiment at Lab with reduced scale (satellite - DIMORPHOS, SIMILAR geometric) 1/ 200/ 400.

The "projectile from the Z Machine will collide the considered as DIMORPHOS asteroid formed by Synthetic REGOLITH plate".

The experiment will be under ICP-AES- ICP-MS -optical sensors-lasers interferometers magnetometers (Fe₃O₄ creation).

The projectiles at the first time will be classical ones (Al, Ti..), but also enriched ones with DEPLETED U or W.

The goal is to have a heavy mass transferred to the Asteroid with a minimum losses by radiative transfer.

To be more comprehensive , more integrity of the mass engaged is respected , more the kinetics will be not imbalanced by the vaporization of the metals(ionized states) more the kinetics will be successful.

Disruptive technologies

Plasma propulsion installed on dangerous asteroids

Fuels used are not disclosed

Author of the note 13.06.2022

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