

Screenshot taken from [this video](#) breaking down visual effects in the Sonic the Hedgehog 3 movie.



$$2 * \text{atan}(\tan(70/2) * (\text{panel width} / \text{panel height}))$$

$$2 * \text{atan}(\tan(70/2) * (668 / 279)) = 118.368948649834 \text{ degrees}$$

Panel Height: 279 pixels

Panel Width: 668 pixels


Earth Diameter: 1997 pixels, 12742 km

Visible Section of Earth: 668 pixels, **4262.2213319979968028 km**

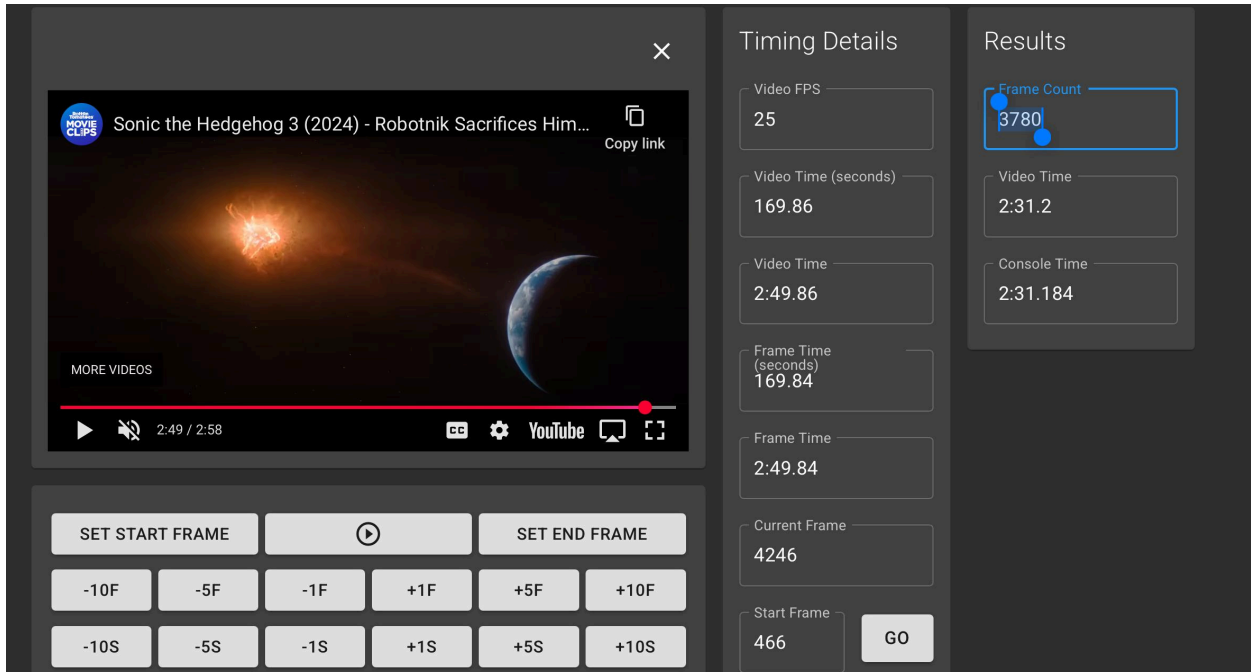
https://vsbattles.fandom.com/wiki/User_blog:Dark-Carioca/TF_G1_cartoon_-_Galvatron_destroys_Thruull

Distance from PoV to Object = Object Size*Panel Height in Pixels/[object size in pixels*2*tan(70/2)]

$4262.2213319979968028 * 279 / [668 * 2 * \tan(70/2)] = 1271.1797372634536408097 \text{ km}$

 **Sonic the Hedgehog 3 (2024) - Robotnik Sacrifices Himself | Movieclips**

This particular video runs on 25 fps, and Shadow pushed the station for 3780 frames until we're shown how far it is from the Earth.



$3780 / 25 = 151.2 \text{ seconds}$



Earth: 560 pixels, 12742 km

Panel Height: 988 pixels,

$$12742 * 988 / [560 * 2 * \tan(70/2)] = \mathbf{16052.7610348907810486 \text{ km}}$$

$$16052.7610348907810486 - 1271.1797372634536408097 = \mathbf{14781.5812976273274077903 \text{ km}}$$

$$14781581.2976273274077903 / 151.2 = 97761.7810689638056070787 \text{ m/s, Mach}$$

285.0197698803609492917746

Eclipse Cannon's Estimated Mass: [2583832961.01 kg](#)

$$0.5 * 2583832961.01 * 97761.781068964^2 = 12347318436038303520.2847222 \text{ joules,}$$

2.9510799 Gigatons of TNT

Large Mountain Level+

Not even Island Level, ngl...

BONUS:

When the Eclipse Cannon's reactor core overloaded, it created an explosion that could be seen from Earth.



Explosion: 1048.6143237625547522 pixels,

Panel Height: 984 pixels

Panel Width: 2360 pixels

$2 * \text{atan}(\tan(70/2) * (2360/984)) = 118.455355289524$ FoV

$2 * \text{atan}(1048.6143237625547522 / (984 / \tan(118.455355289524/2))) = 121.609416363242$
degrees

Explosion Distance: **16052.7610348907810486 km**

<https://planetcalc.com/1897/>

Explosion Size: **57457.1543 km**

$Y = ((x/0.28)^3/1000$

Y is yield in Megatons and x is the radius in km.

$((28728.57715/0.28)^3/1000 = 1080110672159.9244886766582031$ Megatons of TNT,

1.0801107 Exatons of TNT

Multi-Continent Level

The reactor core was overloaded with Chaos Energy, which was stated to have [thermonuclear properties](#), so there's no need to halve the result,