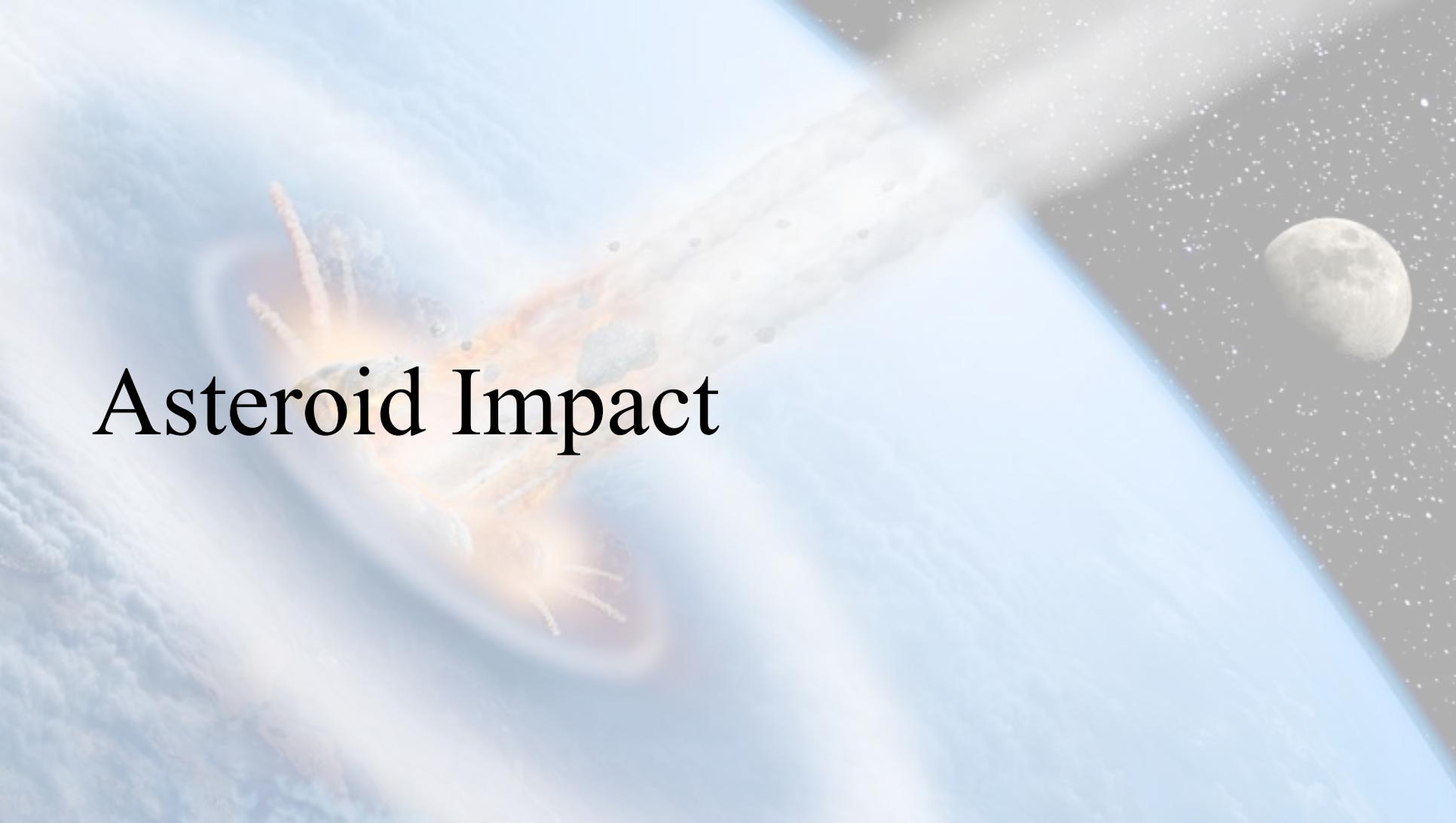
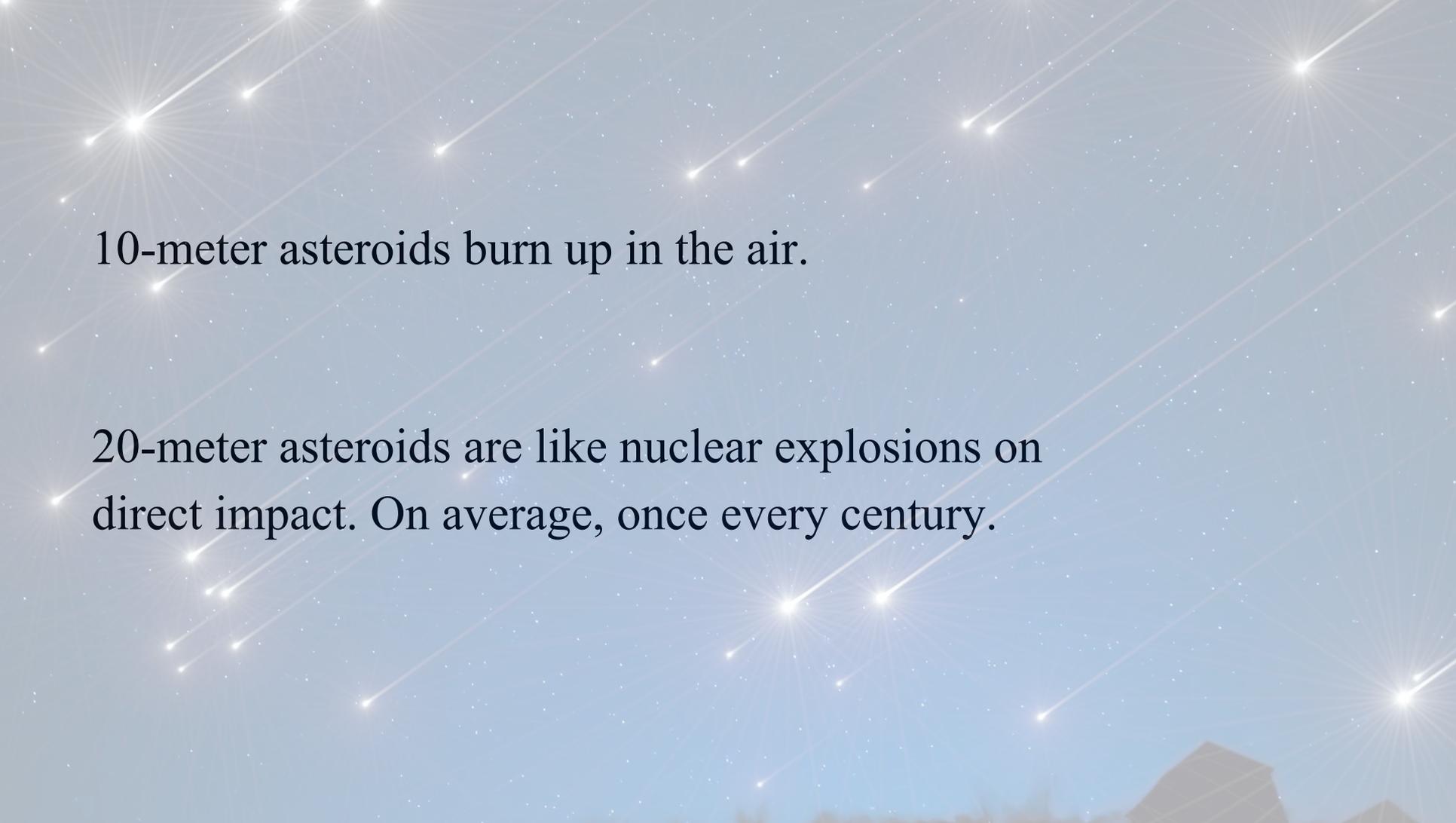


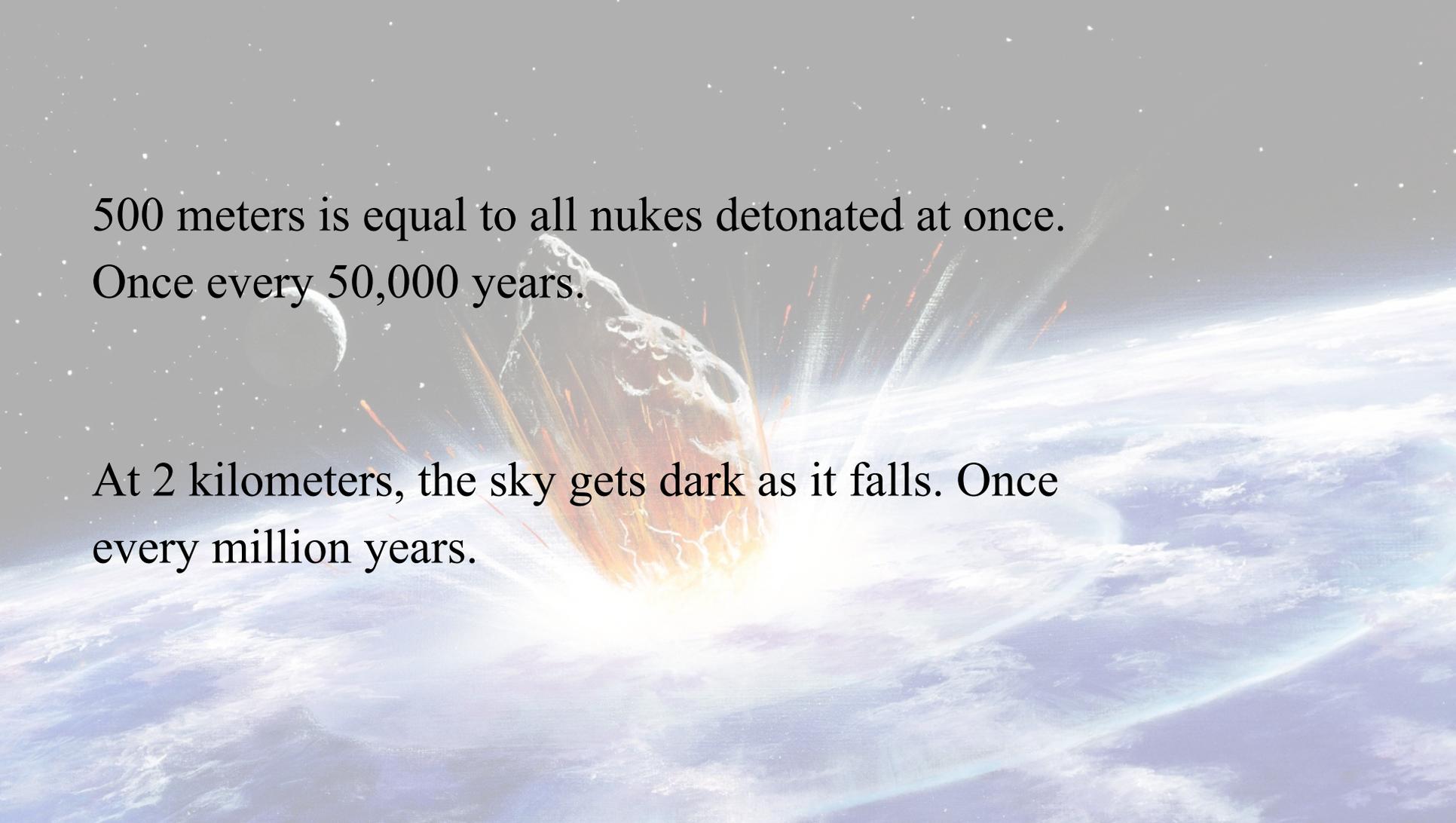
Asteroid Impact

A dramatic illustration of an asteroid impact. A large, elongated, and highly reflective asteroid is streaking through space from the upper right towards the lower left. The asteroid's surface is covered in numerous dark spots, possibly craters or mineral inclusions. A bright, glowing trail of light and heat surrounds the leading edge of the asteroid. In the background, the Earth's blue and white atmosphere is visible on the left, and the Moon is seen in the dark, star-filled sky on the right. The overall scene conveys a sense of impending disaster and cosmic scale.



10-meter asteroids burn up in the air.

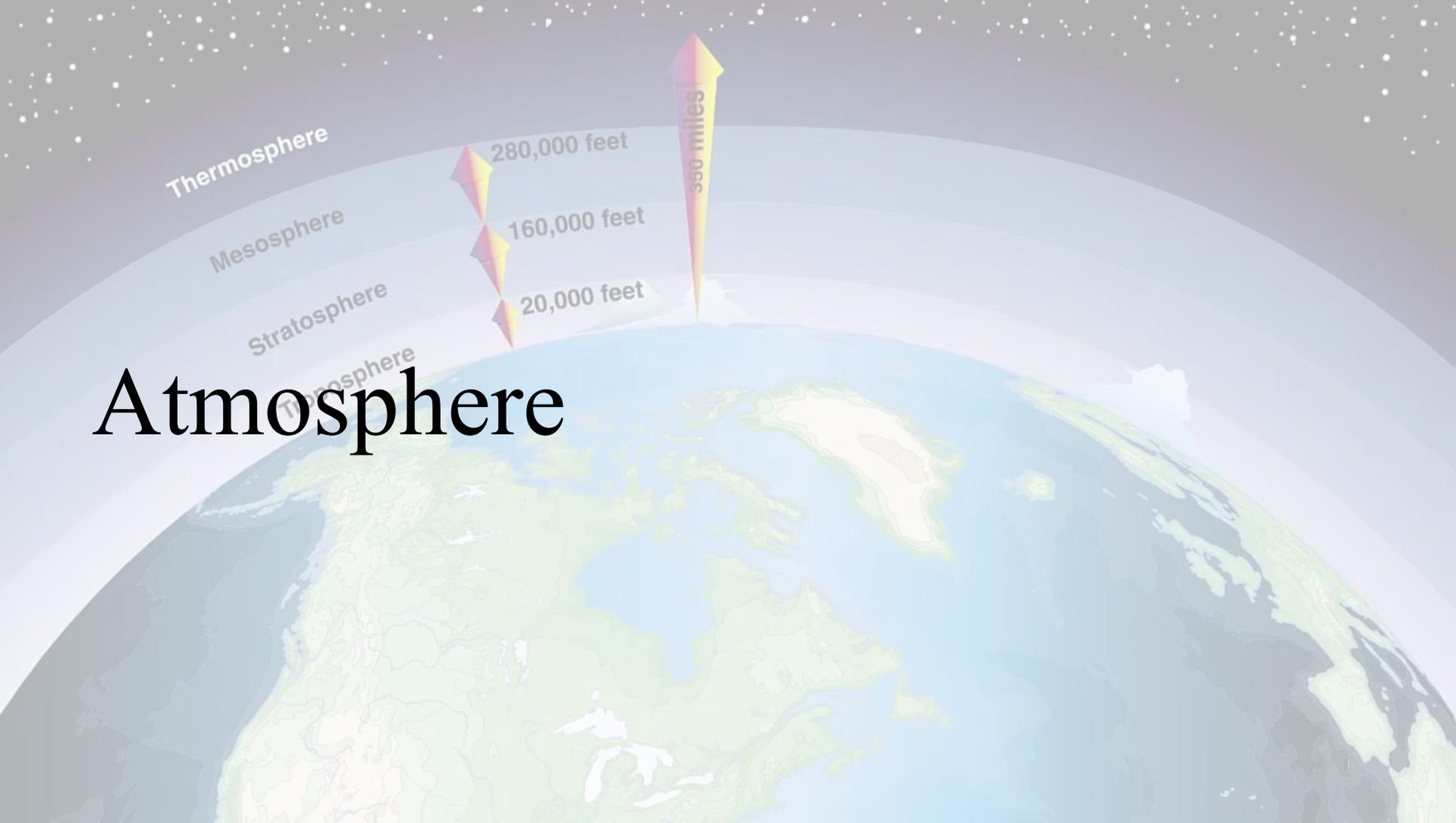
20-meter asteroids are like nuclear explosions on direct impact. On average, once every century.

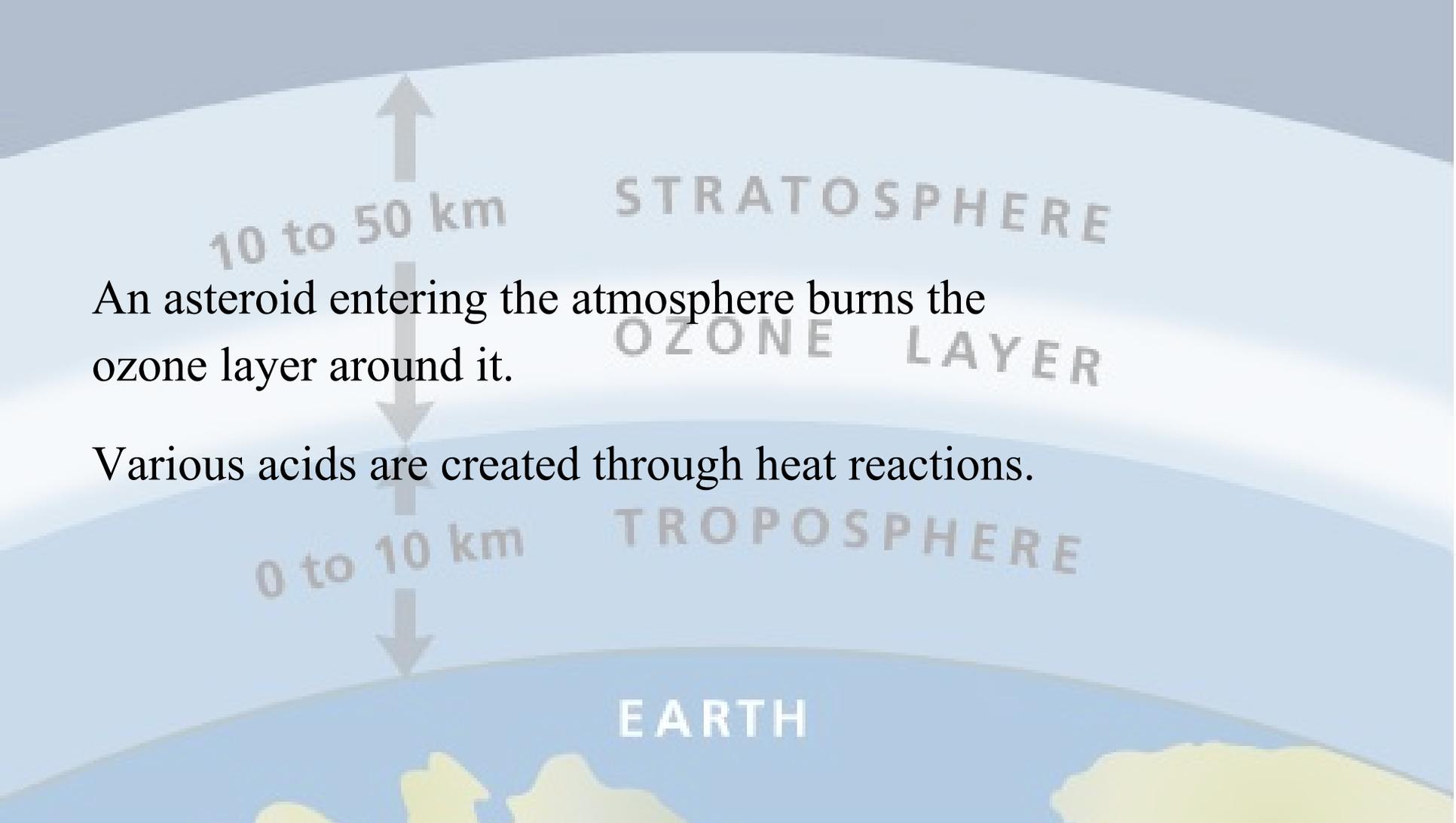


500 meters is equal to all nukes detonated at once.
Once every 50,000 years.

At 2 kilometers, the sky gets dark as it falls. Once
every million years.

Atmosphere



A diagram showing the layers of Earth's atmosphere. At the bottom is the Earth's surface, labeled 'EARTH', with some landmasses in yellow. Above it is the 'TROPOSPHERE', labeled '0 to 10 km'. Above that is the 'STRATOSPHERE', labeled '10 to 50 km'. Within the stratosphere, there is a shaded region labeled 'OZONE LAYER'. A vertical double-headed arrow spans the height of the stratosphere. The background is a light blue gradient representing the sky.

10 to 50 km

STRATOSPHERE

An asteroid entering the atmosphere burns the ozone layer around it.

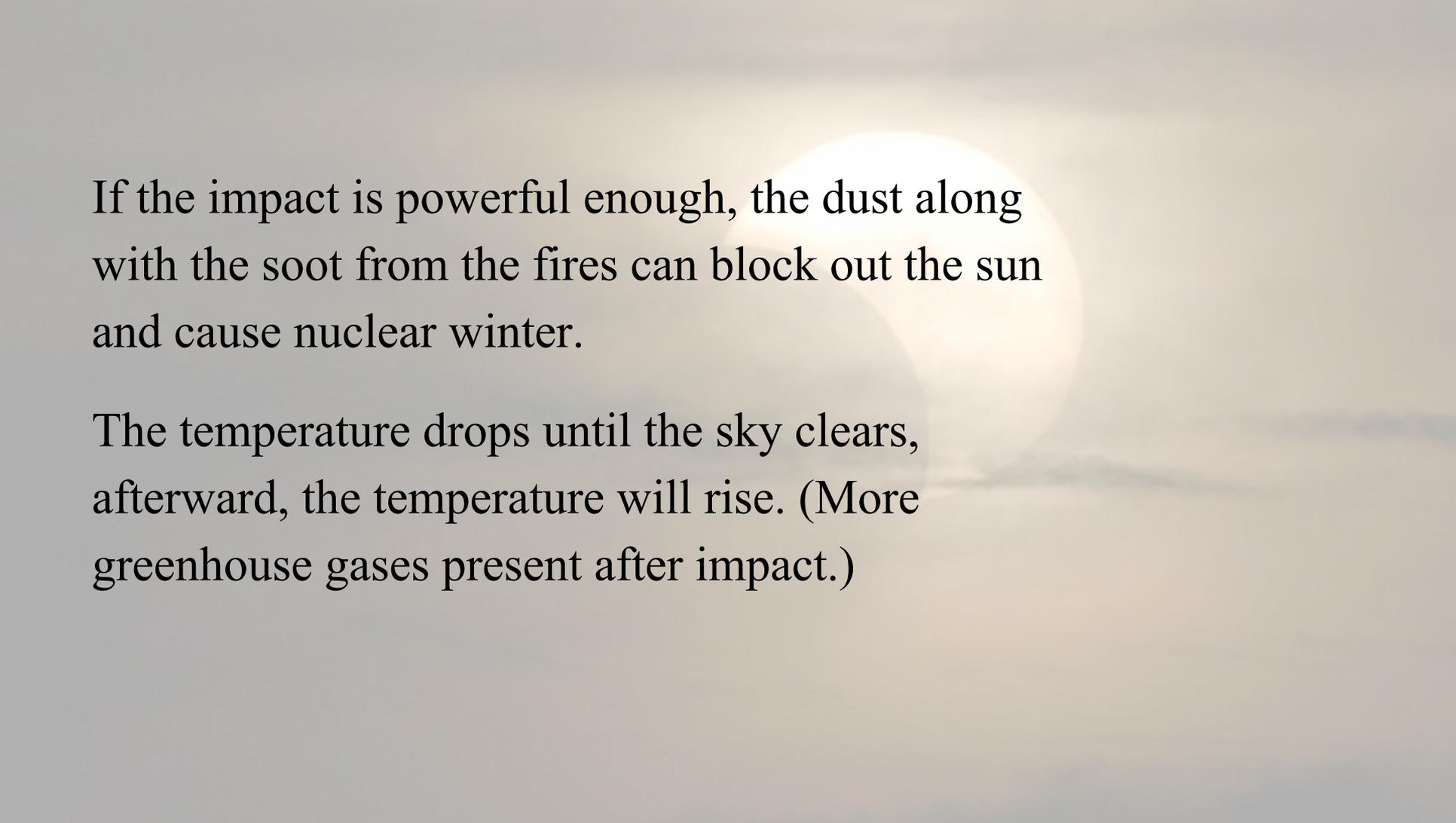
OZONE LAYER

Various acids are created through heat reactions.

0 to 10 km

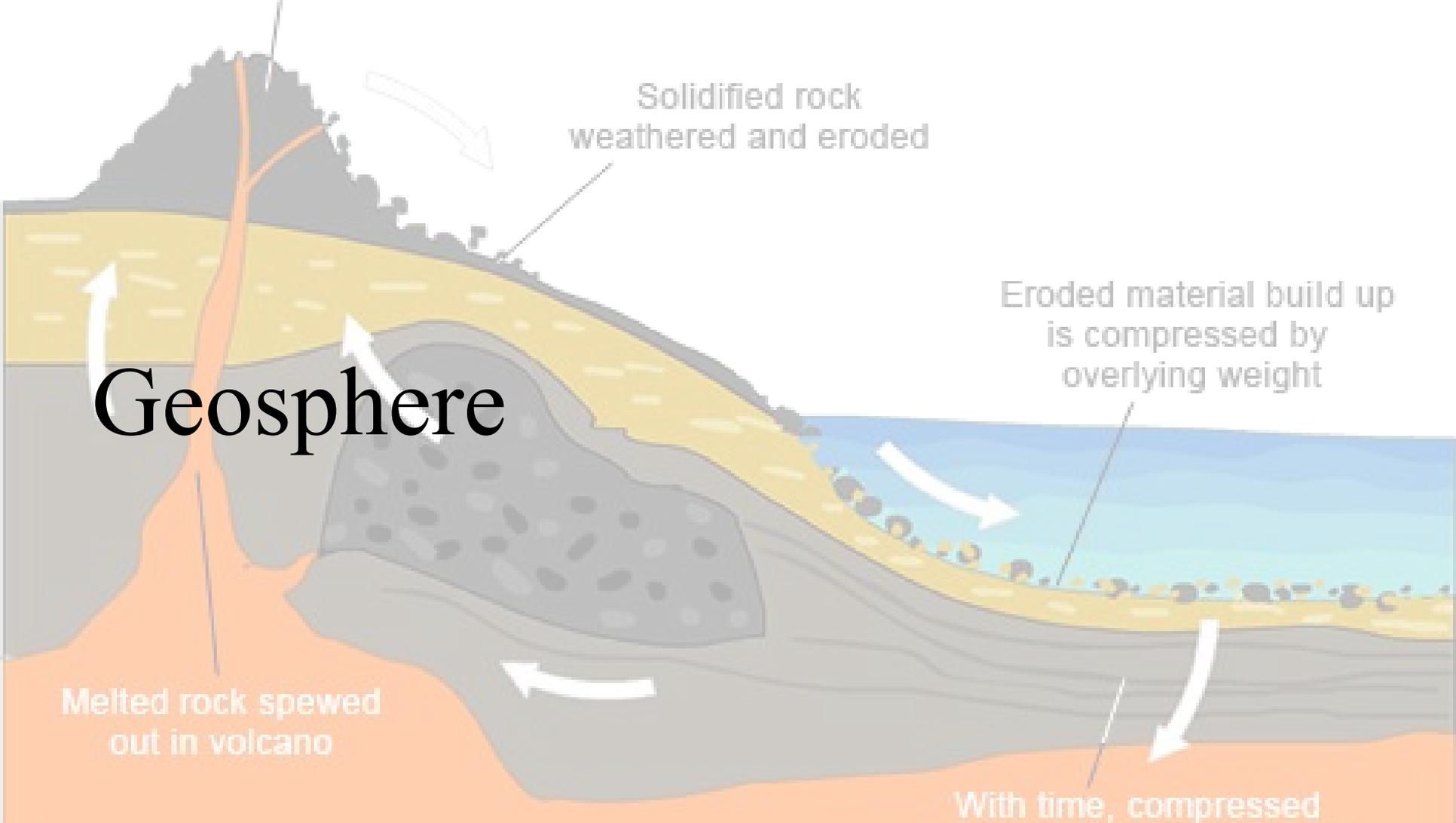
TROPOSPHERE

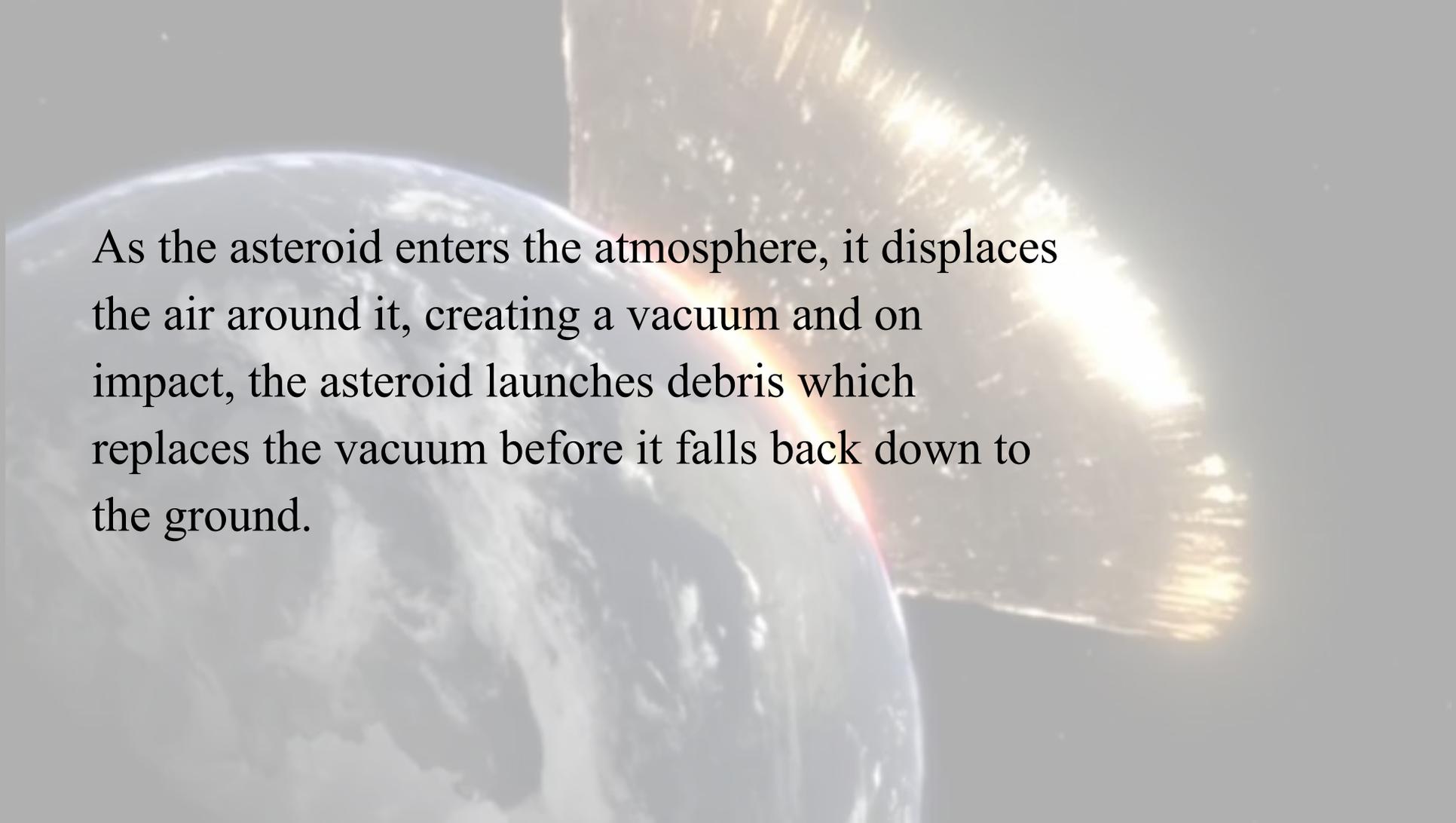
EARTH



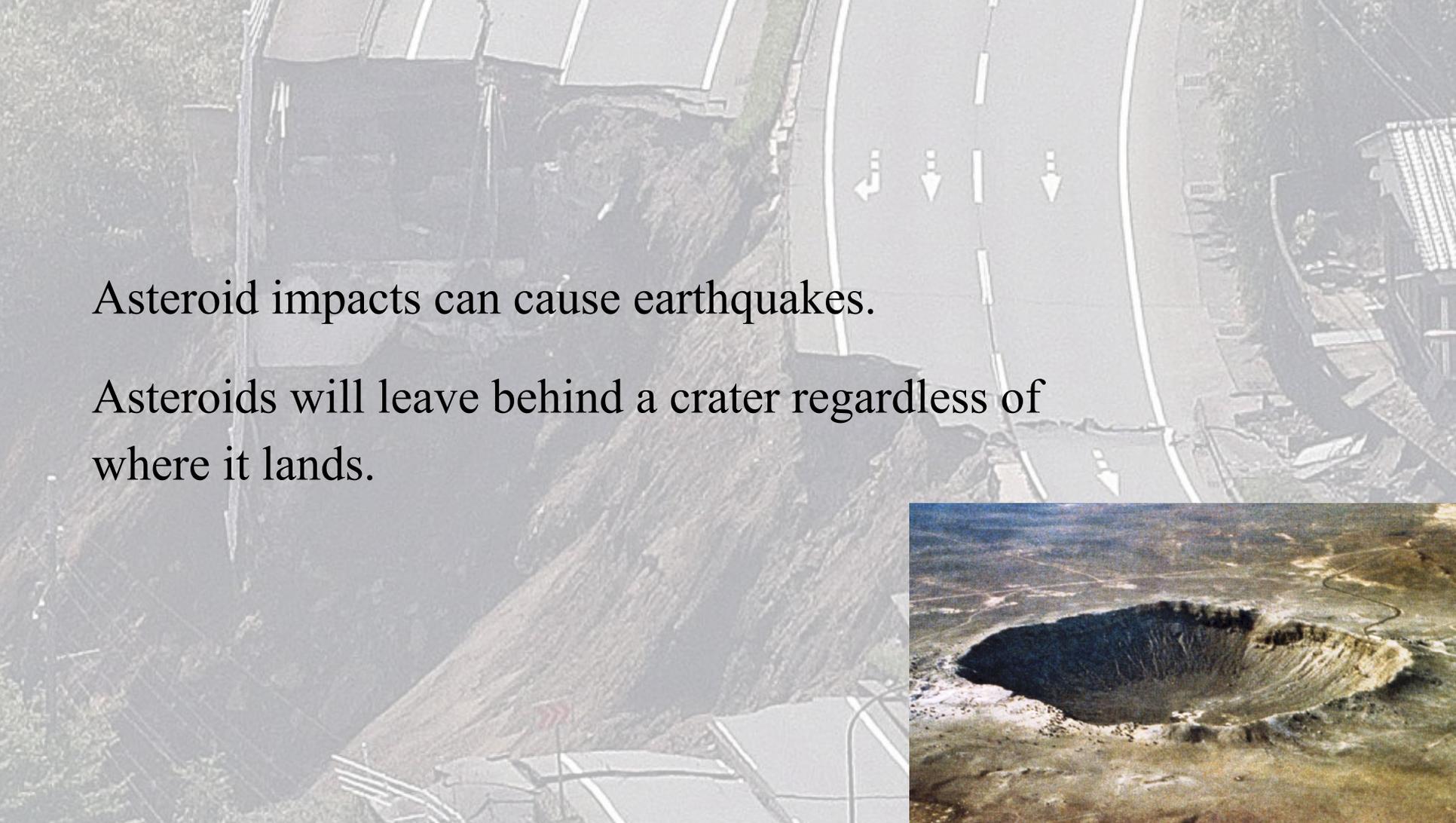
If the impact is powerful enough, the dust along with the soot from the fires can block out the sun and cause nuclear winter.

The temperature drops until the sky clears, afterward, the temperature will rise. (More greenhouse gases present after impact.)



A large asteroid is shown streaking through Earth's atmosphere, creating a bright fireball and a massive plume of debris. The Earth's surface is visible in the lower-left corner, and the sun is visible in the upper-right corner, casting a bright glow over the scene.

As the asteroid enters the atmosphere, it displaces the air around it, creating a vacuum and on impact, the asteroid launches debris which replaces the vacuum before it falls back down to the ground.

An aerial photograph showing a road with a large, deep crater that has formed in the middle of it. The road has white dashed lines and arrows indicating traffic flow. The surrounding area appears to be a residential or commercial district with buildings and trees.

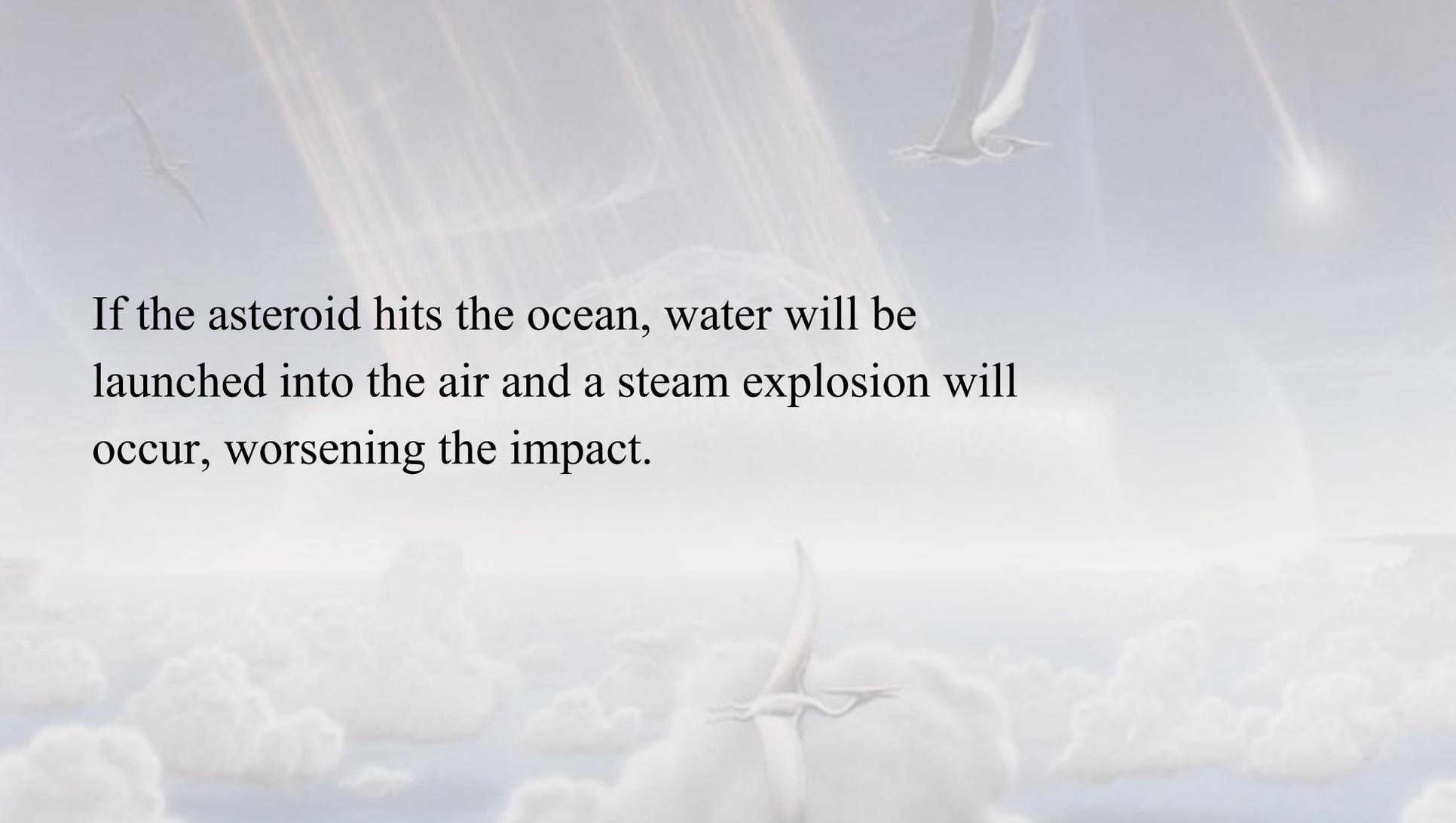
Asteroid impacts can cause earthquakes.

Asteroids will leave behind a crater regardless of where it lands.

A close-up, high-angle photograph of a large, circular crater. The crater has a dark, shadowed interior and a raised, rocky rim. The surrounding terrain is a mix of brown and tan colors, suggesting a dry or rocky environment.

Hydrosphere





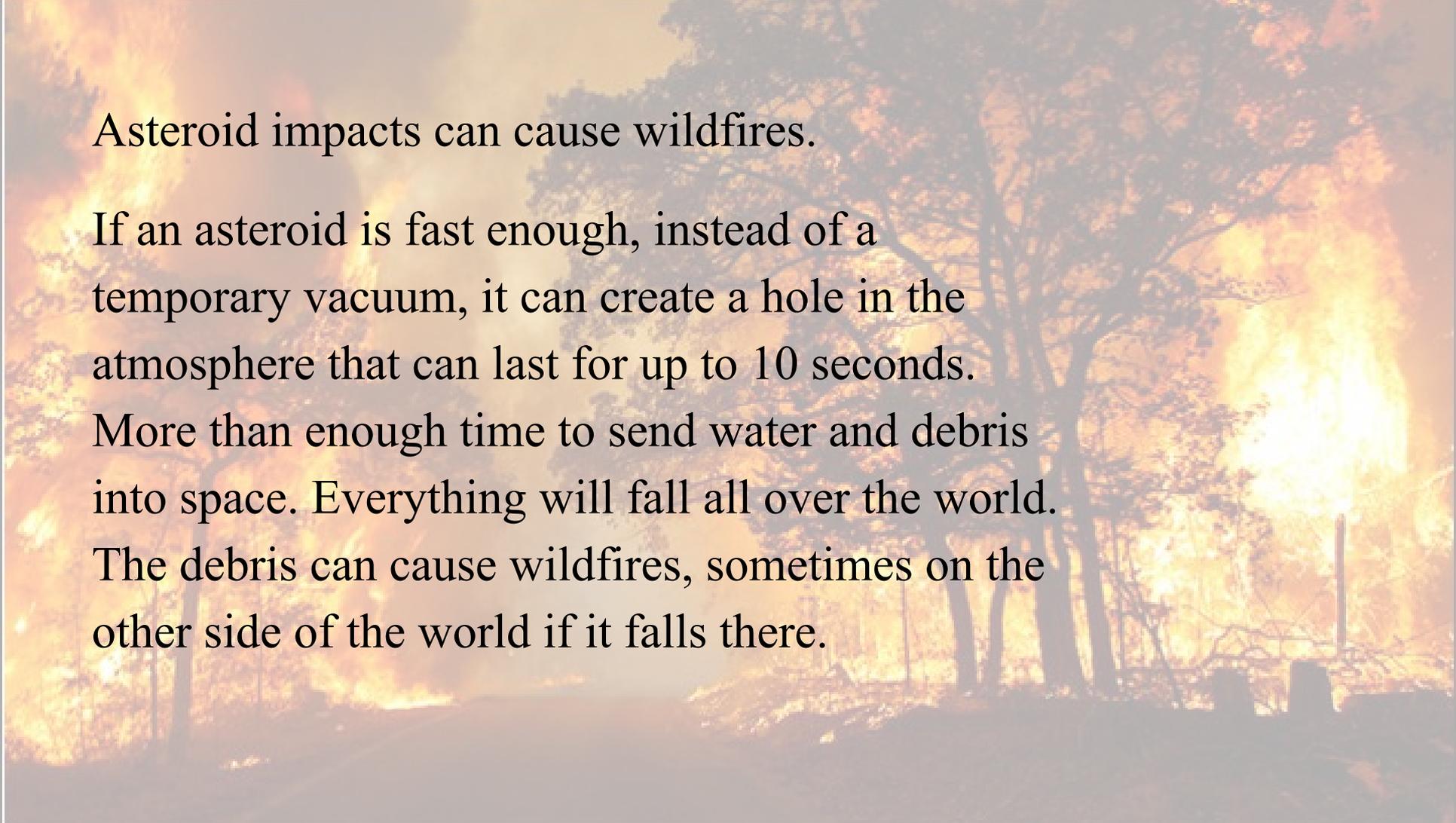
If the asteroid hits the ocean, water will be launched into the air and a steam explosion will occur, worsening the impact.

A dramatic, high-contrast image of a massive tsunami wave crashing over a beach. The wave is a towering wall of white water, curling over itself as it moves towards the shore. In the foreground, a white metal railing with vertical posts runs along the edge of a sandy beach, leading the viewer's eye into the scene. The sky is filled with dark, heavy clouds, with a bright patch of light breaking through near the horizon. The overall mood is one of immense power and destruction.

Asteroid impacts can cause tsunamis.

The image shows a vast, multi-level conservatory or greenhouse. The structure is a complex, geometric lattice of metal beams supporting a glass roof. The interior is densely packed with various types of green plants, including large ferns, broad-leafed tropical plants, and tall, thin trees. The lighting is bright and even, suggesting a well-lit indoor environment. The overall atmosphere is one of a lush, controlled natural space.

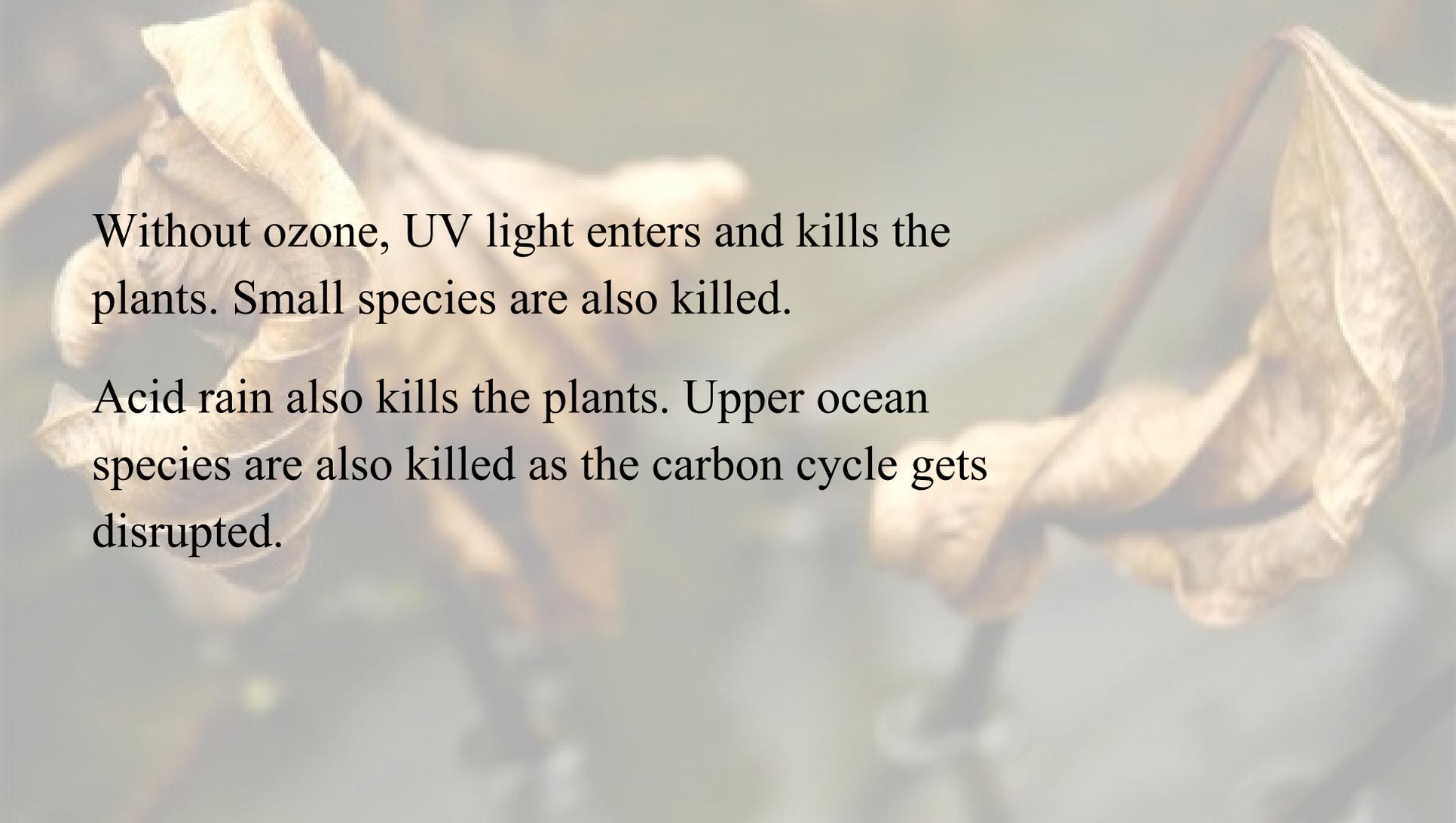
Biosphere



Asteroid impacts can cause wildfires.

If an asteroid is fast enough, instead of a temporary vacuum, it can create a hole in the atmosphere that can last for up to 10 seconds.

More than enough time to send water and debris into space. Everything will fall all over the world. The debris can cause wildfires, sometimes on the other side of the world if it falls there.

The background of the slide shows a close-up of a branch with several large, dried, yellowish-brown leaves. The leaves are curled and appear brittle, suggesting they have been killed by environmental stressors like UV radiation or acid rain. The lighting is soft, highlighting the texture of the dried foliage.

Without ozone, UV light enters and kills the plants. Small species are also killed.

Acid rain also kills the plants. Upper ocean species are also killed as the carbon cycle gets disrupted.

The background image shows a scene of total devastation. The ground is covered in a thick layer of grey ash and debris, including twisted metal, splintered wood, and fragments of what once might have been buildings. In the distance, the silhouettes of skeletal structures and utility poles are visible against a sky filled with heavy, dark clouds. The sun is low on the horizon, casting a pale, orange glow that filters through the haze, creating a somber and desolate atmosphere. The overall color palette is muted, dominated by greys, browns, and the pale orange of the sky.

If nuclear impact winter occurs, photosynthesis may completely stop, which will kill the food chain as the producers start to disappear.

Evening, January 26-27

3 hours after sunset

Pollux

G E M I N I

Procyon

10°

7 pm

1 pm

7 am

Jan 27
1 am

Beehive
Cluster

7 pm EST

Path of Asteroid 2004 BL86

1 pm

Sirius

C A N I S
M A J O R

7 am

L E O

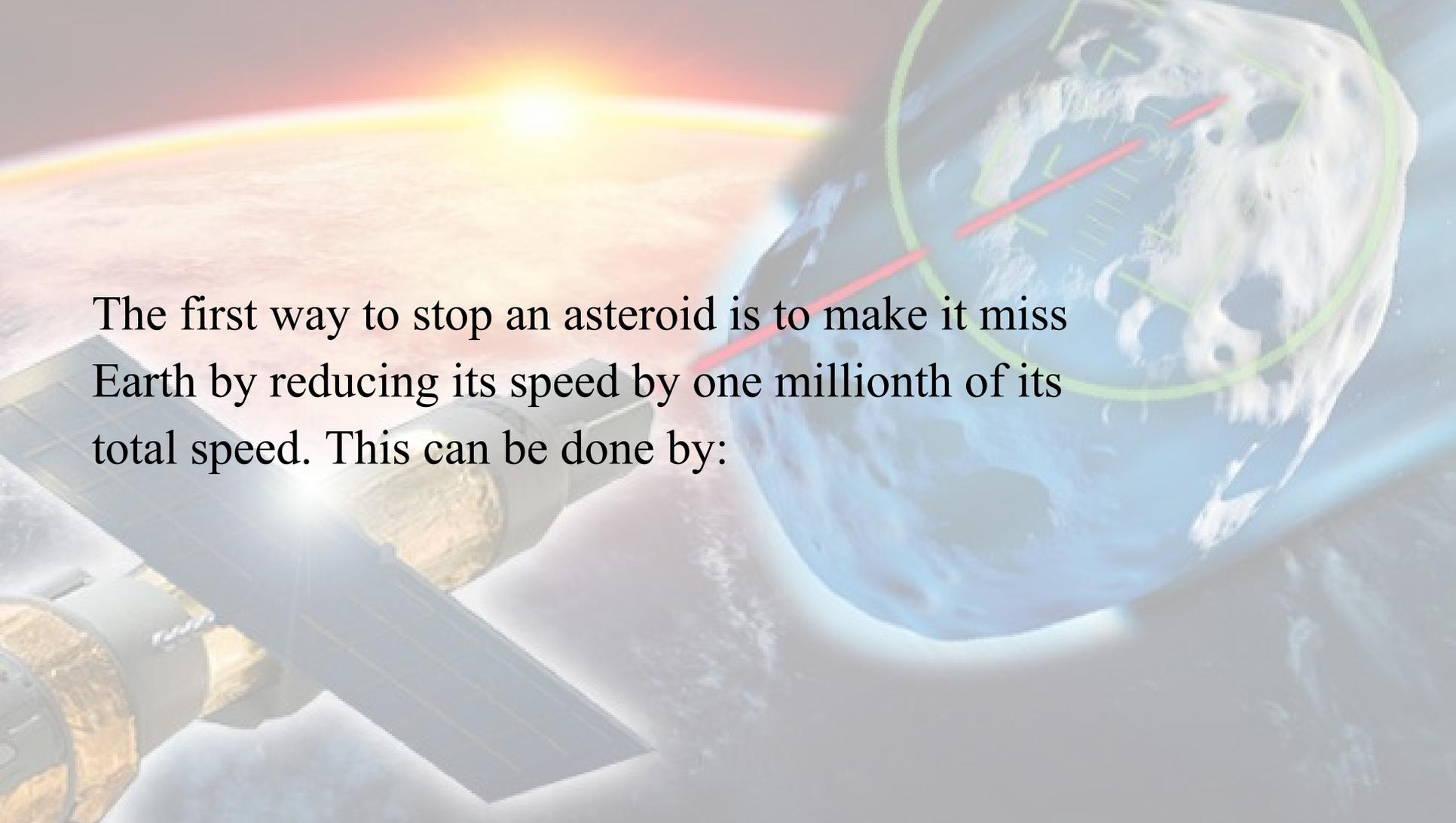
Regulus

H Y D R A

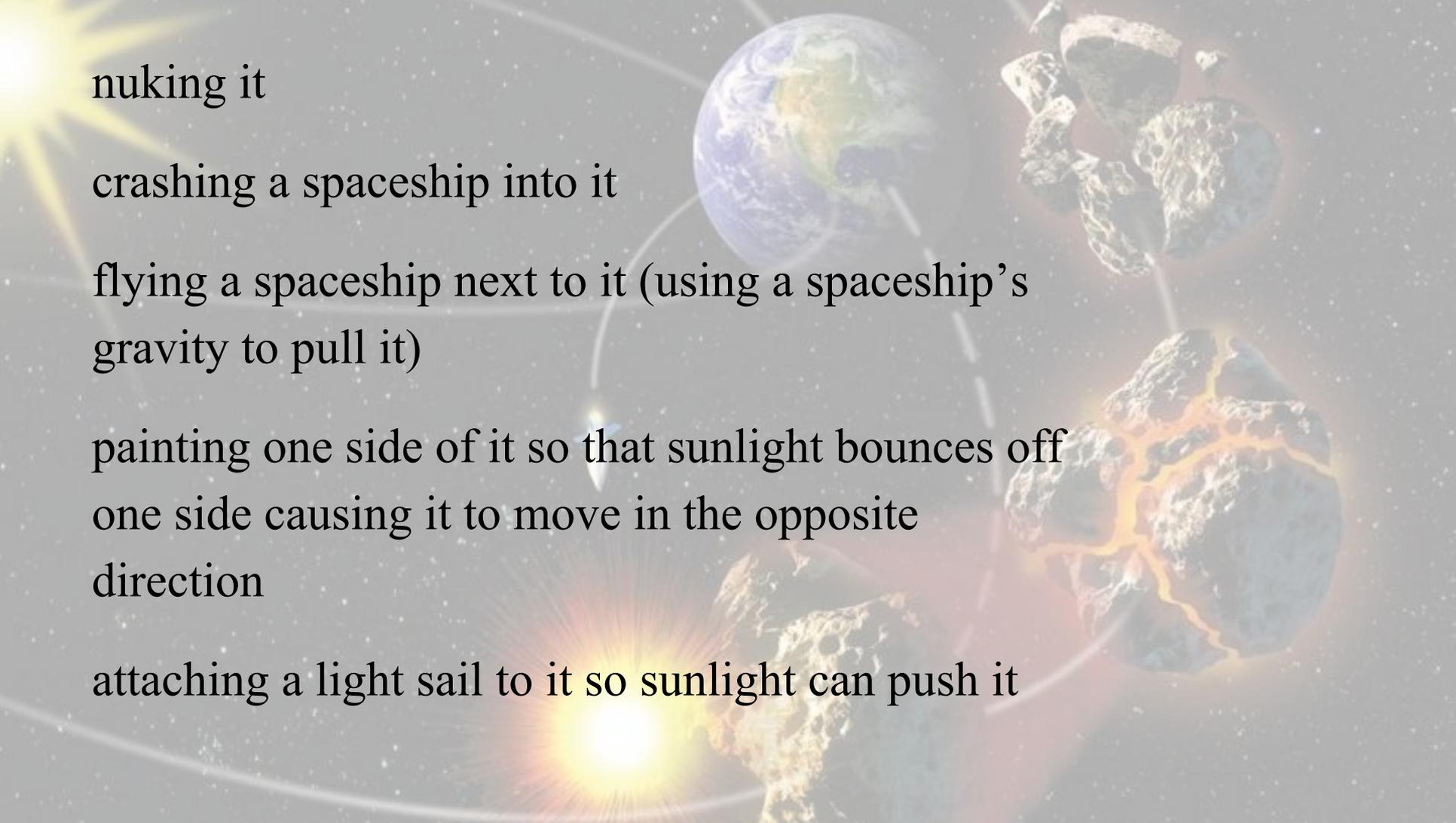
Jan 26
1 am

Satellites and telescopes are being used to find asteroids heading for Earth. 20-meter asteroids are very hard to find; however, it will be easier as technology advances.

Looking East

A satellite with solar panels is shown in the foreground, pointing towards a large, cratered asteroid. A green circle highlights a specific area on the asteroid's surface, with two red lines extending from it. The Earth is visible in the background, partially obscured by the satellite and the asteroid. The scene is set against a bright, hazy sky.

The first way to stop an asteroid is to make it miss Earth by reducing its speed by one millionth of its total speed. This can be done by:



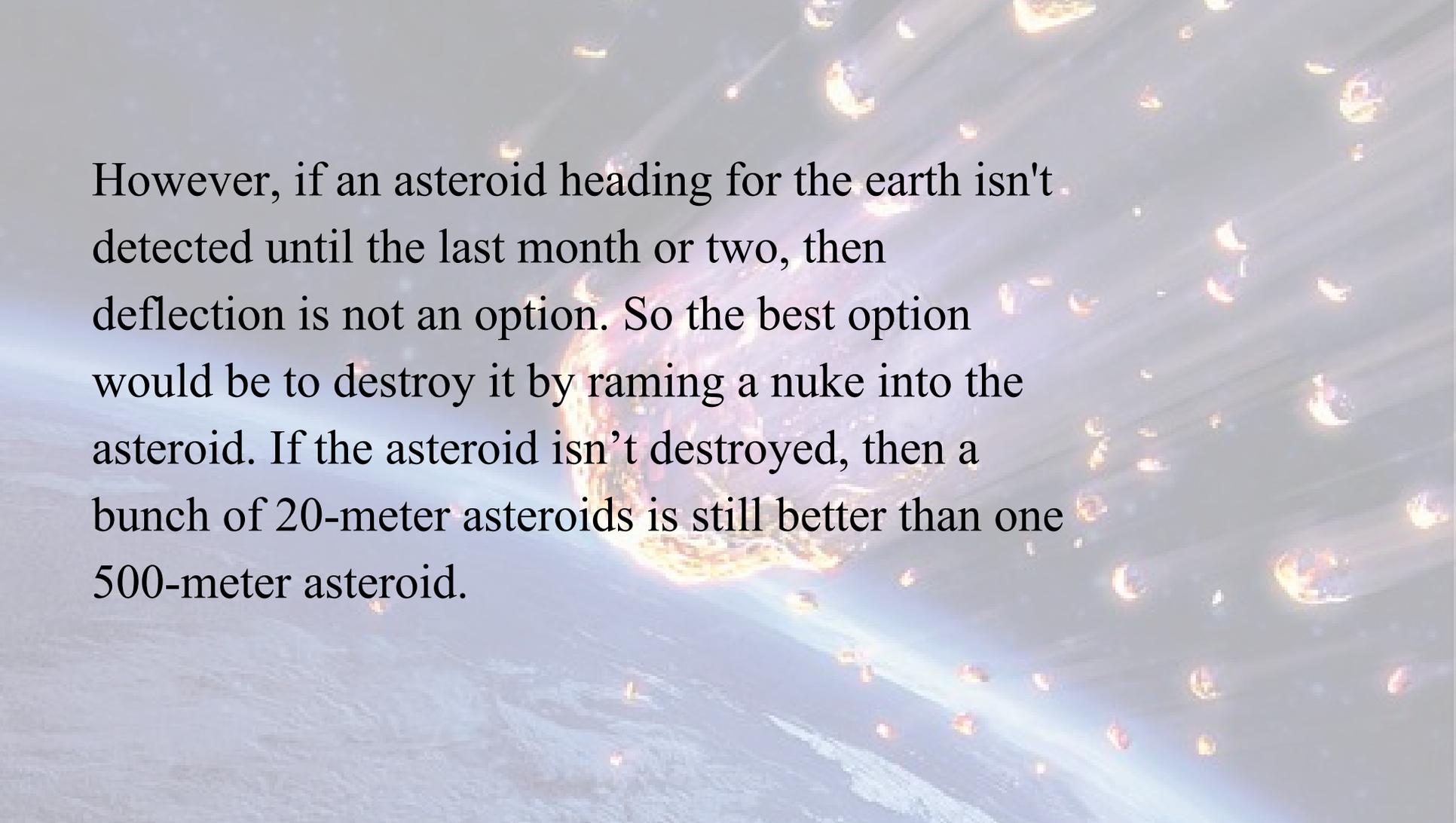
nuking it

crashing a spaceship into it

flying a spaceship next to it (using a spaceship's gravity to pull it)

painting one side of it so that sunlight bounces off one side causing it to move in the opposite direction

attaching a light sail to it so sunlight can push it

A large meteor shower streaking across a dark sky. A bright fireball is visible in the center, surrounded by numerous smaller meteors. The background is a deep blue and black, suggesting a night sky.

However, if an asteroid heading for the earth isn't detected until the last month or two, then deflection is not an option. So the best option would be to destroy it by raming a nuke into the asteroid. If the asteroid isn't destroyed, then a bunch of 20-meter asteroids is still better than one 500-meter asteroid.

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