

ASTEROID TERRESTRIAL-IMPACT LAST ALERT SYSTEM (ATLAS).

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Introduction: The Asteroid Terrestrial-Impact Last Alert System (ATLAS) is a NASA-funded robotic survey and acts as an early warning system for asteroid impacts to Earth [1]. The current two 0.5-meter telescope system is developed and ran out of the University of Hawaii's Institute of Astronomy at two separate locations on the Hawaiian Islands. Although the ATLAS system is also used to identify dwarf planets, supernova explosions and life exposure remanence from a star being absorb by a supermassive black hole in a distant galaxy, the main purpose of this project is to search for large "killer asteroids" that may have a tremendous impact on life on earth.

Summary: The Chicxulub Crater created from an asteroid impact located in the Yucatan Peninsula (Mexico) estimated to be 65 million years ago, is hypothesized to be the major contributor to the extinction of the Dinosaurs [2]. More recently, the Chelyabinsk meteor which was a near Earth asteroid entered the earth's atmosphere over Russia on February 15, 2013 exploded in the air burst generating a total kinetic energy of over 400 tons. The visible phenomenon created by the bright burning object included hot light flashes, trailing smoke and a power blast wave that shocked residents in Chelyabinsk, Kurgan, Sverdlovsk, Tyumen, and Orenburg Oblasts, the Republic of Bashkortostan, and in neighboring regions in Kazakhstan [3]. Over the lifetime of this planet, asteroids have been entering earth's atmosphere and becoming meteors with some impacting the earth with life-rocking consequences.

Although the solar system has now stabilized over the last tens of millions of years, there remains asteroids that pose a real danger to life on Earth. The system is supposed to offer one-week warning for a 50-year diameter asteroid and three weeks' notice for larger diameter, "country destroyer" asteroids [4].

Next Steps: There is now additional funding in place from NASA for two additional telescopes to be tentatively located in the Southern Hemisphere. Combined with the current two located in Hawaii, this will give NASA a fuller coverage of the entire observable sky once it is operational. Cooperation between international countries should be encouraged.

References:

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