

Cathay January 2023

www.cathayradio.org

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Mission: The Cathay Amateur Radio Club is basically an active social club of Ham Radio Operators and their spouses. We support local community requests for HAM emergency communications. Several of us are trained in CPR/ First Aid and are involved with community disaster preparedness.

Monday Night Net Time: 9 PM Local Time/PST, Repeater: WB6TCS - RX 147.210, TX 147.810, Offset +0.6 MHz, CTCSS/Tone PL100 Hz

Please note: Repeater: N6MNV UHF 442.700 Mhz, Offset +5MHz, CTCSS/Tone PL 173.8 Hz in South San Francisco is cross linked every Monday Night Net at 9 p.m. to WB6TCS 2-meter repeater.

The CARC Monday night net is the best way to find out the latest club news. All check-ins are welcome.

Message from the President: George Chong, W6BUR

Hello CARC Members and Friends;

Many thanks to Mr. Denis L. Moore – WB6TCS for the use of his repeater for our CARC Monday Night Net.

I wish to thank our CARC members that set aside their valuable time to participate in our Monday night's nets.

Welcome to the New Year of 2023. I hope you all had an end of 2022 joyful holiday experience with family and friends.

Chinese New Year is going to be arriving early this year. Therefore; I wish you all have an upcoming 2023 Happy Chinese New Year, Gung Hay Fat Choy!



Chinese New Year for 2023 is on Sunday January 22, 2023, it will be the year of the water (yin element) Rabbit. The Yin Water element is associated longevity, peace and with the color black. Hence Chinese New Year 2023 is often referred to as the “Year of the Black Rabbit”.

According to the Chinese calendar, folks born in the year of Rabbit are in 1927, 1939, 1951, 1963, 1975, 1987, 1999, 2011, and 2023.

There will be a notable shift in energy as we transition from 2022, the energetic and ambitious Year of the Tiger to the calmer, gentile, rest and reflection Year of the Rabbit in 2023.

Folks born in the year of the Rabbit are well behaved, charming, kind, gentle spirit, quiet, elegant, alert, quick-minded, ingenious, patient, detailed oriented, and very responsible,

They are talented, scholarly, hardworking, persistent and with a flexible mindset are able to come up with solutions to problems and thereby become successful

On the financial side: They need to be careful with their investments. It may be a difficult year for them.

The best mates for born in the year of the Sheep, Monkey, Dog, Boar, and Ox
Poor mates are those born in the year of the Snake and Rooster.

Due to continuing COVID-19 safety concerns the CARC Annual Chinese New Year Luncheon will be skipped for this year, 2023. I know this is a huge disappointment for all of us!

Yes, I really would like to have the CARC meet up in person for lunch one day!

<https://www.chinahighlights.com/travelguide/chinese-zodiac/rabbit.htm>

<https://myartofwellness.com/chinese-new-year-2023-year-of-the-rabbit/>

https://www.travelchinaguide.com/intro/social_customs/zodiac/rabbit/love-compatibility.htm

Silent Key

Mr. Denis L. Moore – WB6TCS passed away in Dec 2022. As more information becomes available it will be posted in a future CARC newsletter.

Many thanks to Cy Moy - AE6CY (formerly WB6TCF) for taking point on following up with this developing sad and heart-breaking news.

Technical Article Introduction:

This month's article discusses the first step by NASA in a future planetary defense system to guard against an asteroid strike like the one that occurred 65 million years ago which caused a worldwide environmental catastrophe wiping out the dinosaurs.

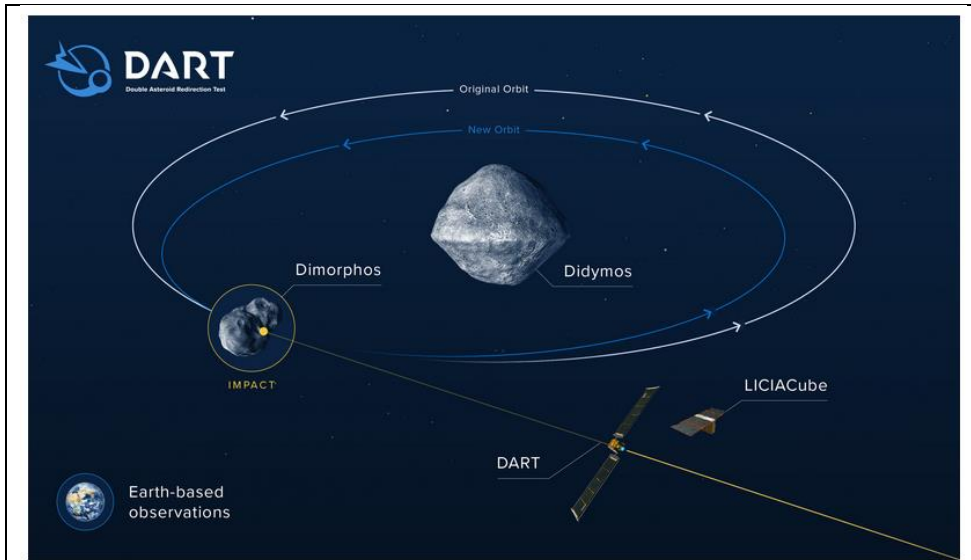
That historic first step was the successful planning, implementation, and execution of the NASA Double Asteroid Redirect Test (DART) mission, where a projectile instrument package traveled 6.8 million miles in 10 months plus 1 day and collided with an orbiting asteroid, speeding up its orbit by 32 minutes.



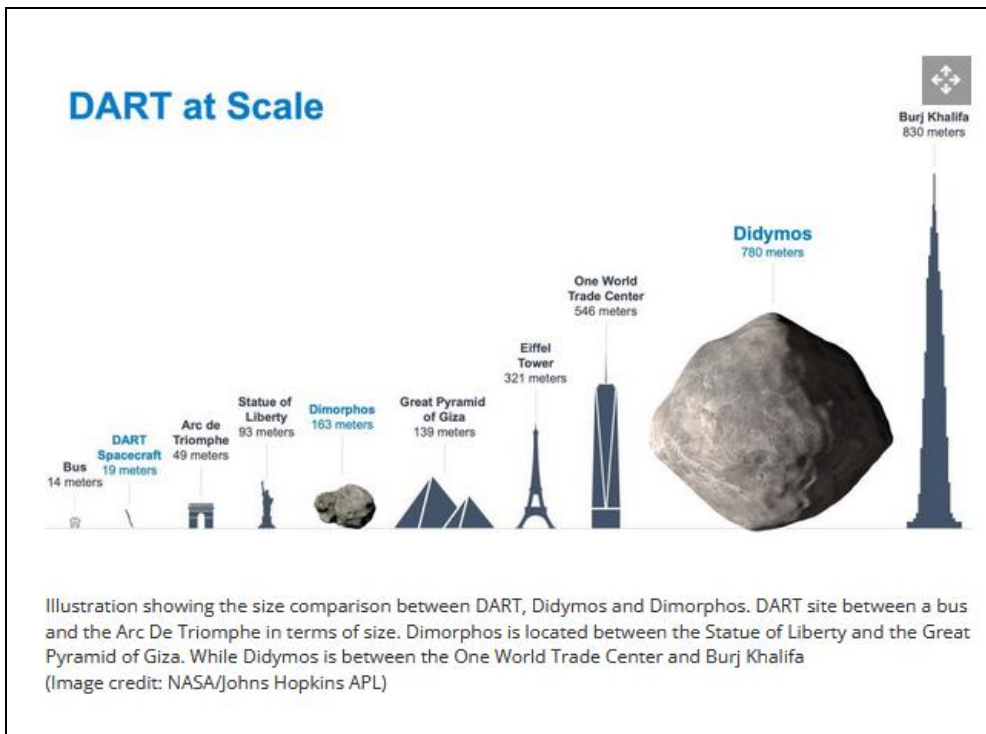
After moving to SpaceX's payload processing facility on Vandenberg Space Force Base in California, DART team members carefully removed the spacecraft from its shipping container and moved it to a low dolly. (Credit: NASA/Johns Hopkins APL/Ed Whitman)

The DART projectile size was 3.9 x 4.3 x 4.3 feet, weighed 1,340 lb and was moving at the speed of 14,460 mph when it impacted the asteroid moonlet Dimorphos and created a very visible debris cloud. The fact that Dimorphos, which is just 525 feet (160 meters)

across was actually impacted by DART after traveling 6.8 million miles away is a remarkable feat of navigational engineering.



DART crashed into Dimorphos in a bid to change the moonlet's orbit. (Image credit: NASA/Johns Hopkins APL)



Additional information follows in the Technical article information.

Final Thoughts

Many thanks to for the use of Mr. Denis L. Moore – WB6TCS repeater for our CARC Monday Night Net.

I wish to thank our CARC members that set aside their valuable time to participate in our Monday night's nets.

Stay healthy and keep yourself from catching COVID-19.

Chat sub s'em to all you CARC members! - George W6BUR, CARC President.

Public Service Announcements

HAM CRAM / HAM Licensing

For upcoming HAM Licensing locations please refer to:

<http://www.arrl.org/find-an-amateur-radio-license-exam-session>

Auxiliary Communications Service (ACS)

The Auxiliary Communications Service (ACS) is a unit of trained professionals who supply communications support to the agencies of the City and County of San Francisco, particularly during major events/incidents. ACS goals are the support of gathering and distribution of information necessary to respond to and recover from a disaster.

The ACS Net begins at 1930 hours (7:30 p.m. PT) local time each Thursday evening, on the WA6GG repeater at 442.050 MHz, positive offset, tone 127.3 Hz. The purpose of this net is to practice Net Control skills, practice checking in with deployment status in a formal net, and to share information regarding upcoming ACS events. Guests are welcome to check in. ACS members perform Net Control duty on a regular basis. On the second Thursday of each month, the net is conducted in simplex mode on the output frequency of the WA6GG repeater, 442.050 MHz no offset, tone 127.3 Hz.

ACS holds its General Meetings on the third Tuesday of each month from 1900 hours to 2100 hours local time. Currently meetings are exclusively conducted over Zoom during the COVID-19 pandemic, ACS looks forward to meeting in person again as soon as possible.

Upcoming meeting dates in 2023 are:

- TBD

Location of in person future ACS meetings is yet to be determined as the regular location is under reconstruction until January 2023. All interested persons are welcome to attend. For further information, contact Corey Siegel KJ6LDJ <kj6ldj@gmail.com>.

For more information, please attend an ACS meeting, check in on the ACS radio net, or call 415-558-2717.

Free Disaster Preparedness Classes In San Francisco – NERT Taught by San Francisco Fire Department (SFFD).

<http://sf-fire.org/calendar-special-events>

TBD

+ Recertifications - Coming Soon!

Pre-register here!

<https://www.eventbrite.com/e/are-you-a-nert-graduate-looking-to-recertify-pre-register-here-tickets-228380330717?aff=odcleoeventsincollection>

This is not for a specific date or location.

San Francisco Fire Department NERT is collecting information from NERT Graduates to help us plan for the new year. By signing up here, you will receive priority notification about upcoming recertification opportunities. This is for any NERT graduate, regardless of when you graduated or whether your NERT certification has expired. Thank you so much for your commitment to NERT and for providing us with information about when you last trained, etc.

Sign Up For Training Classes

This is not for a specific date or location.

San Francisco Fire Department is collecting contact details from prospective students so we can let you know when classes are available. We will email you when classes become available. We plan on holding multiple trainings for new NERTs in 2023 and the information you provide will help us plan. Thank you!

<https://www.eventbrite.com/e/never-taken-nert-before-let-us-know-you-are-interested-in-2022-trainings-tickets-125825993935?aff=odcleoeventsincollection>

***SFFD DOT** is the Fire Department Division of Training. All participants walking, biking or driving **enter through the driveway gate on 19th St.** between Folsom and Shotwell. Parking is allowed along the back toward the cinderblock wall.

Visit www.sfgov.org/sfdnert to learn more about the training, other locations, and register on line. Upcoming Special NERT Events.

San Francisco Police Department: Auxiliary Law Enforcement Response Team (ALERT)

The Auxiliary Law Enforcement Response Team (ALERT) is a citizen disaster preparedness program designed. The ALERT program is for volunteers 16 years of age or older, who live, work, or attend high school in San Francisco.

Graduates of the San Francisco Police Activities League (P.A.L) Law Enforcement Cadet Academy are also eligible to join.

ALERT volunteers will no longer need to complete the Fire Department's Neighborhood Emergency Response Team (NERT) (www.sfgov.org/sfnert) training and then graduate into two 8 hour Police Department course specifically designed for ALERT team members.

ALERT members will work closely with full-time and/or Reserve Police Officers in the event they are deployed after a disaster. The Basic ALERT volunteer will have no law enforcement powers other than those available to all citizens.

SFPD ALERT Training (New Members)

The next SFPD ALERT training class has been scheduled for: TBD

* Class date indicated are only for new members

IMPORTANT- All participants must complete the background interview process in order to be eligible to attend the ALERT training class.

Eligible ALERT participants may register for a training class by contacting the ALERT Program Coordinator, Marina Chacon at sfpdalert@sfgov.org, or by telephone at 415-401-4615.

SFPD ALERT Practice/Training Drill

All active/trained ALERT members are asked to join us for our next training drill, via scheduled for on

TBD

For more information on the San Francisco Police Department ALERT Program, email us at sfpdalert@sfgov.org, or call Lt. Marina Chacon (SFPD Ret.), SFPD ALERT Program Coordinator, at (415) 401-4615.

For additional information on the web please refer to:

<https://sfgov.org/policecommission/alert>

Tech Article:

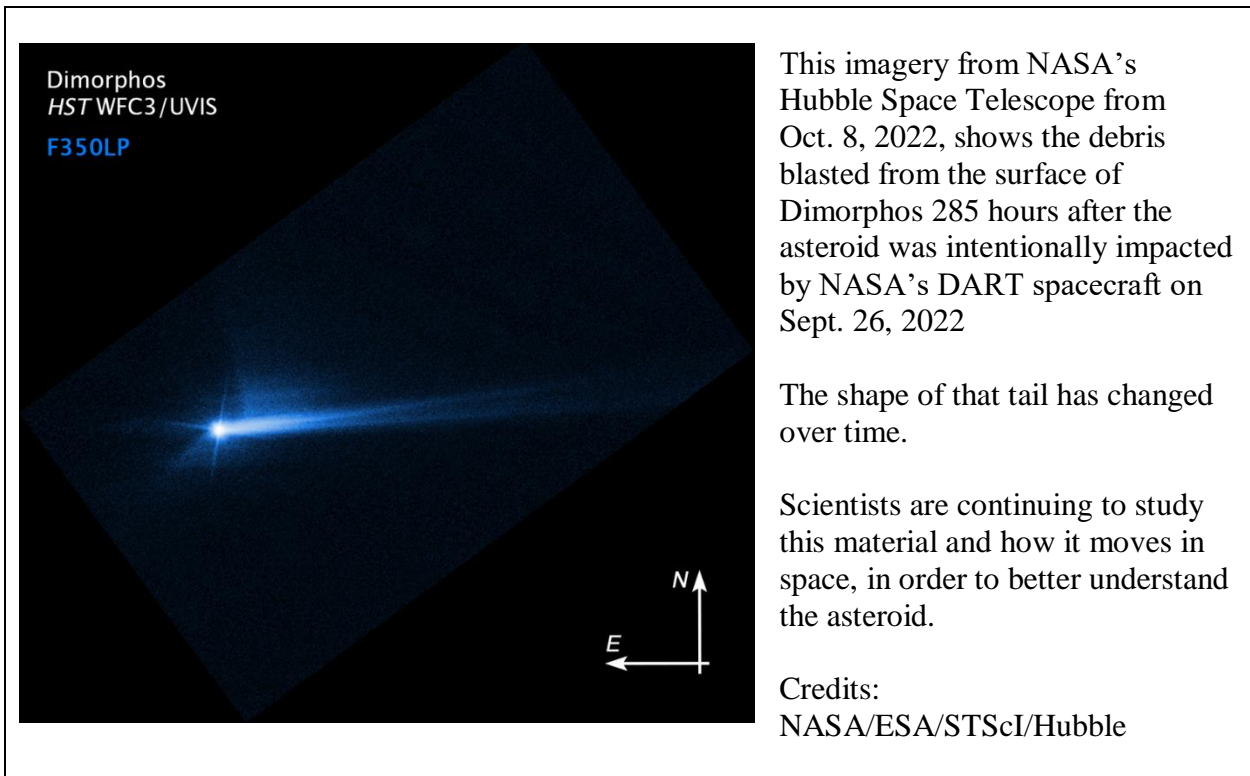


DART (Double Asteroid
Redirection Test)

NASA Confirms DART Mission Impact Changed Asteroid's Motion in Space

<https://www.nasa.gov/press-release/nasa-confirms-dart-mission-impact-changed-asteroid-s-motion-in-space>

Date: October 11, 2022



[Analysis of data obtained over the past two weeks](#) by NASA's Double Asteroid Redirection Test (DART) investigation team shows the spacecraft's kinetic impact with its target asteroid, Dimorphos, successfully altered the asteroid's orbit. This marks humanity's first time purposely changing the motion of a celestial object and the first full-scale demonstration of asteroid deflection technology.

"All of us have a responsibility to protect our home planet. After all, it's the only one we have," said NASA Administrator Bill Nelson. "This mission shows that NASA is trying to be ready for whatever the universe throws at us. NASA has proven we are serious as a

defender of the planet. This is a watershed moment for planetary defense and all of humanity, demonstrating commitment from NASA's exceptional team and partners from around the world.”

Prior to DART's impact, it took Dimorphos 11 hours and 55 minutes to orbit its larger parent asteroid, Didymos. Since DART's intentional collision with Dimorphos on Sept. 26, astronomers have been using telescopes on Earth to measure how much that time has changed. Now, the investigation team has confirmed the spacecraft's impact altered Dimorphos' orbit around Didymos by 32 minutes, shortening the 11 hour and 55-minute orbit to 11 hours and 23 minutes. This measurement has a margin of uncertainty of approximately plus or minus 2 minutes.

Before its encounter, NASA had defined a minimum successful orbit period change of Dimorphos as change of 73 seconds or more. This early data show DART surpassed this minimum benchmark by more than 25 times.

“This result is one important step toward understanding the full effect of DART's impact with its target asteroid” said Lori Glaze, director of NASA's Planetary Science Division at NASA Headquarters in Washington. “As new data come in each day, astronomers will be able to better assess whether, and how, a mission like DART could be used in the future to help protect Earth from a collision with an asteroid if we ever discover one headed our way.”

The investigation team is still acquiring data with ground-based observatories around the world – as well as with radar facilities at NASA Jet Propulsion Laboratory's Goldstone planetary radar in California and the National Science Foundation's Green Bank Observatory in West Virginia. They are updating the period measurement with frequent observations to improve its precision.

Focus now is shifting toward measuring the efficiency of momentum transfer from DART's roughly 14,000-mile (22,530-kilometer) per hour collision with its target. This includes further analysis of the "ejecta" – the many tons of asteroidal rock displaced and launched into space by the impact. The recoil from this blast of debris substantially enhanced DART's push against Dimorphos – a little like a jet of air streaming out of a balloon sends the balloon in the opposite direction.

To successfully understand the effect of the recoil from the ejecta, more information on of the asteroid's physical properties, such as the characteristics of its surface, and how strong or weak it is, is needed. These issues are still being investigated.

“DART has given us some fascinating data about both asteroid properties and the effectiveness of a kinetic impactor as a planetary defense technology,” said Nancy Chabot, the DART coordination lead from the Johns Hopkins Applied Physics Laboratory (APL) in Laurel, Maryland. “The DART team is continuing to work on this rich dataset to fully understand this first planetary defense test of asteroid deflection.”

For this analysis, astronomers will continue to study imagery of Dimorphos from DART's terminal approach and from the Light Italian CubeSat for Imaging of Asteroids (LICIACube), provided by the Italian Space Agency, to approximate the asteroid's mass and shape. Roughly four years from now, the European Space Agency's Hera project is also planned to conduct detailed surveys of both Dimorphos and Didymos, with a particular focus on the crater left by DART's collision and a precise measurement of Dimorphos' mass.

Johns Hopkins APL built and operated the DART spacecraft and manages the DART mission for NASA's Planetary Defense Coordination Office as a project of the agency's Planetary Missions Program Office. Telescopic facilities contributing to the observations used by the DART team to determine this result include: Goldstone, Green Bank Observatory, Swope Telescope at the Las Campanas Observatory in Chile, the Danish Telescope at the La Silla Observatory in Chile, and the Las Cumbres Observatory global telescope network facilities in Chile and in South Africa.

Neither Dimorphos nor Didymos poses any hazard to Earth before or after DART's controlled collision with Dimorphos.

For more information about the DART mission, visit:

<https://www.nasa.gov/dart>

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Last Updated: Oct 12, 2022

Editor: Roxana Bardan

For additional background information see:

<https://dart.jhuapl.edu/Mission/index.php>

<https://www.space.com/dart-asteroid-mission>