

Cosmically speaking, JPL is about to embark on a mission to the dark side. NASA's next space telescope, the Wide-field Infrared Survey Explorer, is preparing for a Dec. 9 launch that will provide pictures of the entire sky in infrared wavelengths that are invisible to the human eye.

The mission is scheduled to launch no earlier than 6:09 a.m. Pacific time from Vandenberg Air Force Base. WISE will circle Earth over the poles, scanning the entire sky one-and-a-half times over nine months, and will provide astronomers with a significantly different and unique view of the universe relative to visible wavelengths.

"The eyes of WISE are a vast improvement over those of past infrared surveys," said UCLA's Ned Wright, the principal investigator for the mission. "We will find millions of objects that have never been seen before."

"The goal is to produce a catalogue of the entire sky in infrared in our four wavelengths, which are roughly five to 30 times longer than what we see with our eyes," said Project Manager Bill Irace. The result will be a cata-

logue indicating a finding's location and brightness—to be published 17 months after the sky survey is completed—as well as an atlas of images taken.

"Astronomers will be able to go into a database and say, 'I want to look at that part of the sky,' and pull up the actual images that were used to produce the catalogue," said Project Scientist Peter Eisenhardt. "The result of this huge storehouse of images and data is actually what people will be looking for."

Key targets for the mission include the most luminous galaxies as well as brown dwarfs, a type of failed star. Both of these are types of objects where infrared observations of the whole sky are essential to find them.

In some galaxies, more than 99 percent of the energy that is coming out is in infrared rather than visible wavelengths, noted Eisenhardt. "In a visible-light photograph they may be a little distorted and slightly unusual, but if you look at the infrared they're just pouring out light, because they are forming stars at a phenomenal rate," he said. "Some of these ultra-luminous infrared galaxies are so bright they have a tril-

lion or more times the luminosity of the sun, which is tens to even hundreds of times more luminous than the whole Milky Way galaxy. What we'll be able to do is find the most extreme, brightest examples to dissect in detail with a powerful pointed telescope such as the Spitzer Space Telescope, or the upcoming James Webb Space Telescope."

Brown dwarfs don't have enough gravitational force to sustain the fusion reaction that keeps the sun shining so brightly, and they're too cool to see in visible light, but they're still warm enough to see in infrared light. Studies with Spitzer have shown that there are as many brown dwarfs as ordinary hydrogen-fusing stars, Eisenhardt noted. "If you look within 25 light-years of the sun, there are about 100 ordinary stars, but we only know of about five brown dwarfs," he said. "We haven't found them yet because you have to look everywhere in the infrared. So WISE will find these nearest stars, and there's a 50/50 chance that there's one closer than any star we know of right now." Our closest star, Proxima Centauri, is about four light-years

away, but there are reasonable odds that there's a brown dwarf even closer than that, Eisenhardt added.

Asteroids, many of which are very dark, pose another prime target for the mission. Some of them are actually darker than coal, so you don't have a good idea of how big an asteroid is just by how bright it is in reflected light, Eisenhardt said. "But if you look in infrared light with WISE, you're measuring the asteroid's own glow, and that's a much better indicator of how big they are."

The mission will also indicate how the infrared properties of asteroids change during an asteroid day. Asteroids rotate like Earth does, with a warmer day and a cooler night, meaning there's more radiation coming off on the day side of the asteroid than on the morning side, which exerts a tiny force on the asteroid that gradually changes its orbit. "When that orbit changes enough, it can get into a resonance with Jupiter and get kicked all over the solar system," Eisenhardt explained. "It's actually thought

*Continued on page 3*

## Out of the darkness

### WISE seeks luminous galaxies, brown dwarfs

By Alex Abels

The goal is to produce a catalogue of the entire sky in infrared in our four wavelengths, which are roughly five to 30 times longer than what we see with our eyes.

**Project Manager Bill Irace**

Astronomers will be able to go into a database and say, "I want to look at that part of the sky," and pull up the actual images that were used to produce the catalogue.

**Project Scientist Peter Eisenhardt**

# Keeping up WITH Chris

By Mark Whalen

## Jones has seen it all during a 40-year JPL career

Since his high-school math teacher allowed students to read magazines in class when their work was finished, Chris Jones was well familiar with JPL back in Huntington Park in the early 1960s. He recalls particular fascination with a *Scientific American* article on JPL's Mariner 4 mission, which flew by Mars in November 1964, and made a mental note to find out what JPL was all about. It was just barely five years before Jones began to make his own mark at the Laboratory.

In March of this year Jones took over as associate director for flight projects and mission success. After joining JPL in 1969, the USC aerospace engineering graduate began contributing to JPL's blossoming solar system exploits with his contributions in design, test and flight operations for Mariner 9, Voyager and Galileo. Following a period of seven years in line management, he served as spacecraft development manager for the Cassini mission and managed the Space Interferometry Mission before most recently leading the Solar System Exploration Directorate. Here Jones discusses his impressions of his new position thus far.

**You have been on the job about nine months now. How is it going?**

Early on, I was comparing myself to Tom Gavin. I was asking myself, "What would Tom do in this situation?" I'm less inclined to do that now. Tom left a tremendous legacy with this job, and I learned a lot from him, but now I have my own interests and my own priorities that I'm going to pursue.

**What is the mission of the associate director for flight projects and mission success?**

This office is responsible for maintaining JPL's infrastructure for conducting successful flight projects. I'm responsible for chairing the Project and Engineering Management Committee; overseeing the Flight Projects Practices and Design Principles documents; and making sure that the projects are conducting the appropriate risk-management activities that ensure successful missions. All of these things that were put in place over the last 10 years need care, feeding, updating or improvement—and for the things that don't work—retirement.

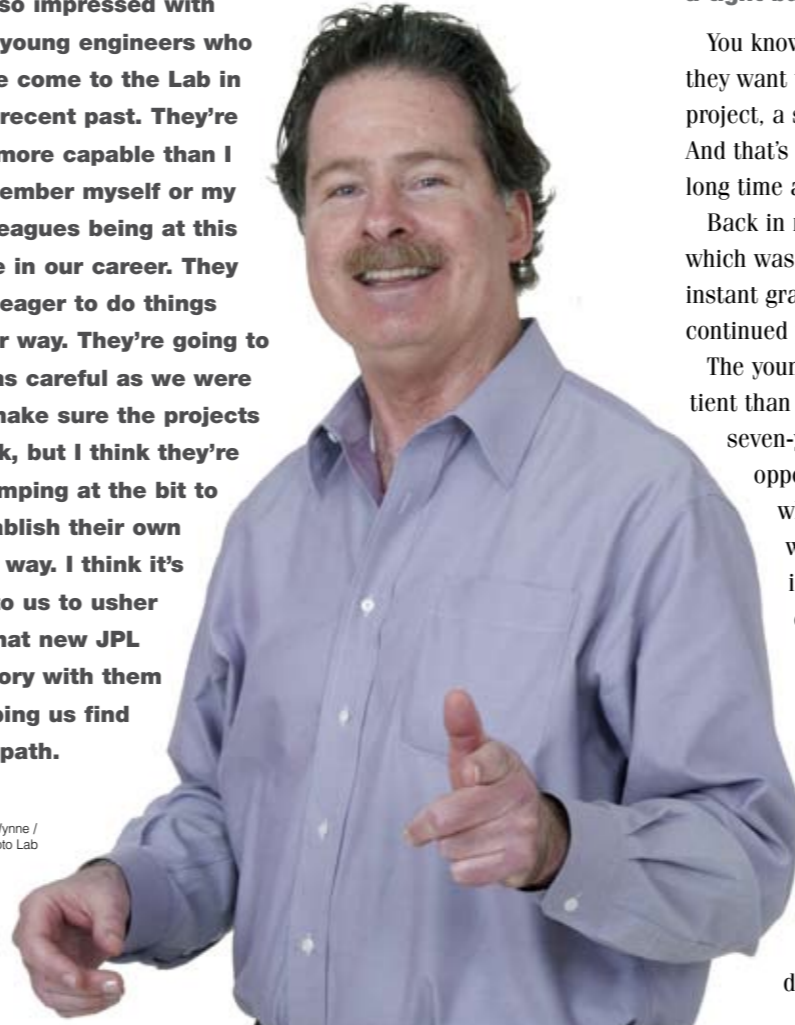
**Where do we stand on infrastructure? Is JPL ready and nimble enough to adapt as needed, particularly today with more flight projects than ever before?**

I think JPL is very ready. There are some principles we've decided to use as guideposts, but as technology changes I think those principles might have to change. We may find that they don't fit the new technology or the new challenge, and we'll have to chart a new course.

Also, I'm so impressed with the young engineers who have come to the Lab in the recent past. They're far more capable than I remember myself or my colleagues being at this time in our career. They are eager to do things their way. They're going to be as careful as we were to make sure the projects work, but I think they're chomping at the bit to establish their own JPL way.

**I'm so impressed with the young engineers who have come to the Lab in the recent past. They're far more capable than I remember myself or my colleagues being at this time in our career. They are eager to do things their way. They're going to be as careful as we were to make sure the projects work, but I think they're chomping at the bit to establish their own JPL way. I think it's up to us to usher in that new JPL history with them helping us find the path.**

Thom Wynne / JPL Photo Lab



## Retirement program changes coming in 2010

### Basics stay the same; new resources make it easier to save and invest

Caltech is making changes in its retirement program for 2010, under which TIAA-CREF will be the sole plan administrator with expanded investment options.

However, the basics remain the same—Caltech's contributions to the Institute Base Plan will continue unchanged as will the eligibility requirements and pre-tax advantages.

What is changing is that the retirement program will have a single administrative services provider, TIAA-CREF, which allows Caltech to provide:

- Improved customer service with a single point of contact for managing all your Caltech retirement savings;
- Expanded investment options (including a new lower-cost share class of Lifestyle Funds);
- Objective and personalized investment advice; and
- Online tools that make it easier for you to plan and invest for retirement.

Beginning Jan. 1, 2010, TIAA-CREF will administer all future contributions to the program. Any voluntary tax-deferred annuity plan contributions made through Fidelity up to Dec. 31, 2009 will remain with Fidelity unless you choose to transfer them over to TIAA-CREF.

#### Complete your new salary deferral agreement

As a result of this move to a "single administrator" program, everyone who currently contributes to the voluntary tax-deferred annuity plan—through TIAA-CREF or through

Fidelity—must complete a new salary deferral agreement with TIAA-CREF. See "Important Dates" for details.

This is also a good time to review and update your beneficiary information—current beneficiary designations will not apply to future voluntary tax-deferred annuity plan contributions.

Salary deferral agreements and beneficiary updates are easy to do with new user-friendly online tools at <http://www.tiaa-cref.org/caltech>.

#### For more information

For details about these changes and what they mean to you, please refer to the information that was mailed to employees in November. You can find online copies of those communications at the JPL Benefits homepage at <http://hr.jpl.nasa.gov/benefits>. And, if you haven't already, try to attend one of the informational seminars or walk-in workshops, which are being held on-site through Dec. 15. Refer to the schedule posted on the JPL Benefits homepage at <http://hr.jpl.nasa.gov/benefits>.

You can also schedule a personal consultation with a TIAA-CREF representative by going to <http://www.tiaa-cref.org/events> or calling 1-800-732-8353.

If you need additional assistance, please contact the JPL Benefits Office. Representatives are available Monday through Friday, 7:30 a.m. to 4:30 p.m. at T1720, by phone at 818-354-3760, and at [benefits@jpl.nasa.gov](mailto:benefits@jpl.nasa.gov).

#### Important dates

**December 1–16** Complete your new salary deferral agreement, update your beneficiary information, and review/update your investment selections for changes effective with the first payroll in 2010 at <http://www.tiaa-cref.org/caltech>.

**Important: You must complete a new Salary Deferral Agreement to ensure uninterrupted Voluntary TDA Plan contributions in 2010. Due to the plan changes, your current deferral election will not carry over to next year.**

(Keep in mind that you can complete a salary deferral agreement, update your beneficiary information, and review/update your investment selections anytime throughout the year for changes effective with the following payroll.)

Through Dec. 15: Seminars and workshops will be held on-site to help you understand what is changing and what you may need to do. Refer to the schedule posted on the JPL Benefits homepage at <http://hr.jpl.nasa.gov/benefits>.

**Jan. 1, 2010** TIAA-CREF becomes the single administrative services provider for future contributions to the Caltech Retirement Program.

I think it's up to us to usher in that new JPL history with them helping us find the path.

I think we have a great opportunity here to harness that energy and transform not only the Laboratory, but also the kinds of systems we build for space science.

**What motivates the young engineer at JPL in this new era of NASA in transition and working under a tight budget?**

You know, I don't think they think about that. I think they want to see their efforts realized in a successful project, a successful spacecraft, a successful instrument. And that's not much different than I remember it being a long time ago.

Back in my day, all you could do was get on a project, which was going to run for four years; there was no instant gratification, but if you waited long enough and continued plugging at it, hopefully you'd feel that success.

The younger generation might be a little more impatient than that. It's hard to sign up on your first job for a seven-year development like Cassini was. So having opportunities to work on several quick projects, where they can actually build something, take what they've learned and move to the next one is just right for them. That's an opportunity that exists here at JPL that we didn't have back then.

**What are your goals, for your organization and for yourself?**

For me it's always been about JPL goals, the success of our missions, our reputation as a place to do the greatest scientific and technological research that NASA has to offer—all of those things. But we can always do better. For example, we've added many pro-

cesses to our workday lives, but we need to not become over-burdened by them. We must seek efficiency in the things we do, while still keeping an eye on mission success. Two other work elements also merit attention: the continued improvement of software development practices and rethinking how we fly our missions—the mission operations aspects of our flight projects.

**Rethinking in what way?**

Well, flight operations haven't really changed much in 40 years. We form the same teams, we use many of the same tools and products—although they've been upgraded and reprogrammed for modern machines—but much of what they do functionally is the same as it was back in the early 1970s.

I think there's a ripe opportunity to move that technology forward in time by taking a hard look at the ground/flight functional split. I believe that's part of my responsibility, to help balance out the growth of the systems and the elements of projects, and not leave any one of them behind. Those are two areas in which I'd like to see advances made.

**Is JPL heading in the right direction?**

Yes, it is. Better cost estimation and control. A younger and more diverse Laboratory workforce. New facilities and refurbished old ones. Exciting, first-of-a-kind missions. Stronger partnerships. A vibrant technology program. All of these initiatives spell a prosperous future for JPL.

**What would people be surprised to know about you?**

One of my loves is California art. It's an enriching hobby to have, to learn about the history of the state through the artists who have painted it over the last 100 years. It's noncompetitive and it's relaxing.

WISE was competitively selected under NASA's Explorers Program, managed by the Goddard Space Flight Center. The science instrument was built by the Space Dynamics Laboratory in Logan, Utah, and the spacecraft was built by Ball Aerospace & Technologies Corp.



The telescope on the Wide-field Infrared Survey Explorer is shown with the aperture cover removed. The telescope's primary mirror is located at the end of the open tube. This photo was taken during assembly at the Space Dynamics Laboratory in Logan, Utah.

**Will you hang some of your works on your office walls?**

No, I wouldn't want to hang a nice piece of art in here because of the ultraviolet light, the light intensity, the thermal cycles when the air conditioning is cycled on and off; all these things are life limiting. I'm very careful about that. The art I own is, I feel, a temporary possession and I'm preserving it for the next guy.

**Overall at JPL over the past 40 years, which memories stick out in your mind? Are there humbling or exhilarating moments you'll always recall?**

I'll always remember the first failure. I can't say it was my failure, or even JPL's, but we lost the first launched Mariner 71, due to a failure in the guidance electronics in one of the stages of the launch vehicle. I can picture the control room that day. I was at the Cape with the launch team, and I remember the spacecraft gyro data just going crazy; we all knew that it was tumbling. I remember that vividly.

That's kind of a lesson to everybody: if you don't want to have those kinds of memories, make sure they don't fail.

My happiest would have to be seeing Cassini on its way on launch day in 1997, and seeing it going into orbit at Saturn seven years later was also quite an event for me.

Watching Opportunity land on Mars—the so-called hole in one, finding itself in a crater with bedrock in front of it, was just a tremendous event. I remember being here with my son that night, and that was quite exciting.

Those are magical moments.

Now thinking back to the early Mariners, JPL's missions always have made a big difference in my life. I've really been blessed to be here, and I hope others who work at JPL feel the same way. For me, to stumble across JPL has been a stroke of luck; I wouldn't trade it for anything. ■

in Boulder, Colo. Science operations and data processing take place at the Infrared Processing and Analysis Center at Caltech.

For more information, visit <http://www.nasa.gov/wise> or <http://wise.astro.ucla.edu>. ■

# News Briefs



Brian Muirhead

## Muirhead back as chief engineer

Brian Muirhead will return to JPL from his assignment as chief architect and program systems engineer for NASA's Constellation Program and be reinstated as JPL's chief engineer.

The chief engineer will now be elevated to an Executive Council position, and will continue as a joint appointment by the associate director for flight projects and mission success and the director for engineering and science. Muirhead will report to the associate director for flight projects and mission success, Chris Jones.

Muirhead has 32 years of broad technical experience and expertise in mechanical systems, flight system development and systems engineering. He led the design, development, test and launch activities of the Mars Pathfinder flight system and served as Pathfinder's project manager after its successful landing on Mars in 1997. He was the Deep Impact project manager through critical design review, and served as the chief engineer for Mars Science Laboratory.

## Pellegrino honored for balloon work

Sergio Pellegrino, a Division 350 senior research scientist and professor of aeronautics and civil engineering at Caltech, has received the NASA Robert



Sergio Pellegrino

H. Goddard Exceptional Achievement Award as a member of the superpressure balloon team.

The award is for sound engineering and operational development, outstanding teamwork, and perseverance in building a new scientific balloon capability for NASA. The superpressure balloons have made ultra-long-duration flights possible, enabling a new era of scientific discovery.

## Hubble instruments at Smithsonian

Two key instruments from NASA's Hubble Space Telescope—the JPL-developed Wide Field and Planetary

Camera 2 and the Corrective Optics Space Telescope Axial Replacement, or Costar—have a new home in the Smithsonian's National Air and Space Museum in Washington, D.C. after being returned to Earth aboard space shuttle Atlantis last May.

The Hubble instruments will be on display in the museum's Space Hall through mid-December. They then will travel to Southern California to go on temporary display at several venues. In March 2010, the instruments will return to the Smithsonian Air and Space Museum, where they will take up permanent residency.

## Stratman new Caltech general counsel

Victoria Stratman has been named Caltech's new general counsel. She began her new duties on Dec. 1.

Stratman joined the staff in Caltech's Office of the General Counsel in 1996 as associate general counsel and has been serving as deputy general counsel since 1998.

"Over the past 13 years, she has demonstrated an in-depth understanding of the complex legal and management issues that confront a research university that manages a federally funded research and development center,



major observatories and diverse science and technology centers," said Caltech President Jean-Lou Chameau.

Stratman was selected following an extensive nationwide search, Chameau noted. "Being able to appoint an internal candidate at the conclusion of a highly competitive search is very gratifying," he said. "This is not only an affirmation of Vicci's qualifications, it is also a tremendous validation of Harry Yohalem's efforts to develop a talented legal team during his tenure as general counsel."

## Passings



Phil Click

**Joseph "Phil" Click**, 83, a retired JPL assistant laboratory director, died Sept. 11.

Trained as a lawyer, Click became a special agent with the F.B.I. and later worked as legal counsel for the Atomic Energy Commission.

Starting as assistant project contracts manager in the Procurement Division in 1962, he later served as staff contract analyst for Procurement. In 1964, he was appointed staff assistant for procurement at Caltech, and in 1966, he returned to JPL as manager of the Procurement Division. He became assistant Lab director for administrative divisions in 1968.

Click was awarded NASA's Exceptional Service Medal in 1973.

He is survived by his wife, Dorothy; sister Beverly (Don) Redwine; sister-in-law Frances Stevens; nephews Michael (Dee) Redwine, Kenneth (Dawn) Redwine and Will Stevens and nieces Rebecca (Keith) Lincoln and Sarah (Darwin) Vandenberg.

Services were held in Oro Valley, Ariz.

**Toby Solorzano**, 62, a retired member of the Human Resources Division staff, died Sept. 16.

Solorzano worked at the Lab from 1986 to 2006 in the staffing, recruitment and diversity offices.

He is survived by his wife, Barbara, daughter Marisa and son Toby Clark. Services were held in Claremont, Calif.

**Vincent Anicich**, 67, a longtime JPL chemist, died Nov. 3.

Anicich joined JPL in 1976. He was investigation scientist for the ion and neutral mass spectrometer on Cassini. His JPL research was focused on ion-molecule reactions, especially related to Titan's atmosphere, and he developed an ice simulation facility to study processes in the interstellar medium and outer solar system icy satellites. In 2002 he became supervisor of the Atomic and Molecular Collisions Group. He retired in 2004.

Anicich is survived by his father, John, wife Marjorie, four children and four grandchildren. Services were held Nov. 9 at the Church of Jesus Christ of Latter-Day Saints in Sunland.

**R. Bruce Crow**, 75, a retired electrical engineer, died Nov. 5.

Crow worked at JPL from 1965 to 1996. His work included engineering communications systems for the Search for Extra Terrestrial Intelligence and Topex projects and helping to pioneer the ranging system tracking Mariner V. He shares a patent for the 3rd order phase locked loop, technology used in deep-space communications.

Crow is survived by his wife, Joan, daughters Patty, Nancy and Kathleen,

son Steven and seven grandchildren. Services were held Nov. 9 at St. Rita's Church in Sierra Madre.

**Dennis Enari**, 72, a retired JPL telecommunications manager, died Nov. 8.

After working at JPL for contractor Bendix Field Engineering as a senior field engineer in deep-space operations control and planning and as a systems data analyst for command and tracking systems, Enari became a JPL employee in 1970. Among his roles were manager of tracking and data systems and manager of telecommunications and mission support for selected NASA and European Space Agency projects. He retired in 1999.

Enari is survived by daughters Batya and Kira, sister Carolyn, brother Donald, grandchildren Brachah, Yosef and Danya, and ladyfriend Jeanette Canon. Services were held Nov. 12 at Forest Lawn in Glendale.

A heartfelt thank you to my JPL colleagues for their words of sympathy and kind deeds after the recent passing of my father. Your support meant a lot.

Jane Platt

We would like to thank our friends at JPL for their sympathy over the sudden passing of my dad, William Bell. The kind words, cards and plants were greatly appreciated during this difficult time.

Bryan and Michele Bell

My family would like to thank JPL for all of your kindness and thoughtfulness on the passing of my husband, Toby Solorzano. He was a great man who gave 20 happy years of his precious life to JPL.

Barbara Solorzano,  
Marisa and Toby Clark

## Letters

From my heart, a thousand thank yous to all my JPL friends and colleagues for the wonderful outpouring of sympathy and kindness to myself and family after the recent passing of my husband Gene. A special thanks to my "other special family" in the Office of Communications and Education, and to JPL Hospitality for the beautiful plant, and the Director's Office for the beautiful orchids.

Yvonne Samuel

## Retirees

The following JPL employees retired in November:

**Charles Kurzwil**, 52 years, Section 382B; **Roger Helizon**, 31 years, Section 3466; **Charlotte Marsh**, 31 years, Section 1702; **Charles Ruggier**, 25 years, Section 333F; **Juinn Jenq Wu**, 17 years, Section 3545; **Jacob Chapsky**, 16 years, Section 383H; **David Mih**, 11 years, Section 5126; **Lawrence Scherr**, 11 years, Section 383J; **Donald Benson**, 10 years, Section 3754.

JPL RETIREES:  
FOR ACCESS TO CLASSIFIED ADS  
AT JPL'S ONLINE NEWS SOURCE

<http://dailyplanet>

E-MAIL US AT  
[universe@jpl.nasa.gov](mailto:universe@jpl.nasa.gov)

# Universe

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WINTER  
12/09  
JPL

# Safety Awareness *news*

A PUBLICATION OF THE OCCUPATIONAL SAFETY PROGRAM OFFICE

## HOLIDAY ELECTRICAL SAFETY



By Masoud Jafari  
Fire Safety, System Safety Program Office

- Inspect all electrical decorations to make sure that they are not damaged before plugging them in. Cracked or frayed sockets, loose or bare wires and loose connections may cause a serious shock or start a fire.
- Use lights and other electrical decorations that bear the seal of a nationally recognized certification agency such as the Consumer Safety Association (CSA), Underwriters Laboratory (UL) or Electrical Testing Labs (ETL).
- Follow the use and care instructions that accompany your electrical decorations. Check packaging to determine the maximum number of strings that may be linked together. Always unplug an electrical decoration before replacing light bulbs or fuses.
- Don't allow children or pets to play with electrical decorations. Even small light decorations can produce a deadly electric shock if they are misused.
- Halogen lamps operate at high temperatures. Make sure halogen bulbs do not come into contact with draperies, clothing or other flammable materials.
- For added electric shock protection, plug outdoor electric lights and decorations into circuits protected by ground fault circuit interrupters (GFCIs). Portable outdoor GFCIs can be purchased where electrical supplies are sold.
- Never use electric lights on a metallic tree, which can become charged with electricity from faulty lights.
- Turn off electrical light strings and other decorations before leaving home or going to bed. Automatic timers are available for both indoor and outdoor applications.
- Use a dry wooden or fiberglass ladder when hanging holiday lights, and be sure to stay clear of overhead electrical wires.
- Do not use staples, nails or thumb tacks to hold outdoor lighting in place as this can start a fire. Use hooks or insulated staples instead to hold outdoor lighting in place.
- Examine extension cords to make sure they are not cracked, frayed, cut or damaged. Never run extension cords across the walkway or under the rug.
- Use extension cords sparingly and do not overload them.
- When using extension cords outdoors, make sure they are marked for outdoor use by checking the label on the box and be sure to plug them into a GFCI-protected outlet.
- Keep outdoor decorations elevated so that water won't drain into the electrical connection and cause a shock or a short circuit.
- Watch for flickering lights, sparks from appliances, switches or wall outlets, circuits that do not work, and switch plates and wall outlets that are warm to the touch. If any of these conditions are found, you should have them repaired immediately.

## DEEP-FRIED TURKEYS

By Gregg Ellers

With the holidays upon us, creating a holiday meal is traditionally centered on a roasted turkey. However, more people are discovering the delicious and unique taste of deep-fried turkey. After enjoying the juicy meat, crisp exterior and tasty flavor, many people swear that frying a turkey is the only way to do it right. Yet, there are a few safety tips that you should follow when frying a turkey because it is a little trickier than putting a turkey in the oven.

The Environmental Health and Safety Office (OSPO, SSPO and EAPO) would like to wish everyone a happy and safe holiday season and remind everyone that the practice of deep-frying turkeys is hazardous. If you don't take precautions, you may end up with an injury or fire. Deep fryers can be dangerous because:

- Many units easily tip over, spilling the five gallons of hot oil within the cooking pot.
- If the cooking pot is overfilled with oil, the oil may spill out of the unit when the turkey is placed into the cooking pot. Oil may hit the burner/flames, causing a fire to engulf the entire unit.
- Partially frozen turkeys placed into the fryer can cause a spillover effect. This too, may result in an extensive fire.
- With no thermostat controls, the units also have the potential to overheat the oil to the point of combustion.
- The sides of the cooking pot, lid and pot handles get dangerously hot, posing severe burn hazards.

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## LANYARD SAFETY

Lanyards have become very popular and are widely used at JPL. The neck lanyard allows the ID badge to be readily seen for easy identification. However, lanyards can have their drawbacks if not worn properly or if they are distributed to the wrong users or in the wrong situation. One should always consider the potential hazards of their work areas when purchasing a lanyard.

**When working around machinery or other hazardous area, neck lanyards are discouraged. JPL suggests a clip-on type of badge holder.**

For non-hazardous areas, the best and safest lanyard is one that has the "breakaway" feature. If the lanyard is caught on the edge of a desk or any other protruding object, a small plastic piece on the lanyard breaks apart and allows the lanyard to "fall" from the neck, preventing neck injuries and other more serious injuries.

JPL Stores offers both kinds of lanyards; regular and breakaway. Consider your working area and any potential areas where a neck lanyard can get caught. When in doubt, breakaway is always the safest, best choice.



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### DEEP-FRIED TURKEYS

Keep these safety tips in mind when deep-frying turkeys:

- Follow the manufacturer's instructions.
- Turkey fryers should always be used outdoors a safe distance from buildings and any other material that can burn.
- Never use turkey fryers on wooden decks or in garages.
- Make sure the fryers are used on a flat surface to reduce accidental tipping.
- Never leave the fryer unattended.
- Never let children or pets near the fryer when in use. Even after use, never allow children or pets near the turkey fryer. The oil inside the cooking pot can remain dangerously hot, hours after use.
- Only deep-fry smaller turkeys—up to 12 pounds.
- To avoid oil spillover, do not overfill the fryer. Use this simple practice first:

Place the bird into the cooker that is to be filled with oil.

Fill the rest of the cooker up with water to the prescribed level as indicated on the side of the cooker.

Remove the bird from the cooker, leaving only water in the cooker.

The level of water left in the cooker is roughly equal to the amount of oil you should use.

*Note: The oil will expand somewhat when heated. After draining the water out of the cooker, use a slightly smaller amount of oil; say two to three cups less.*

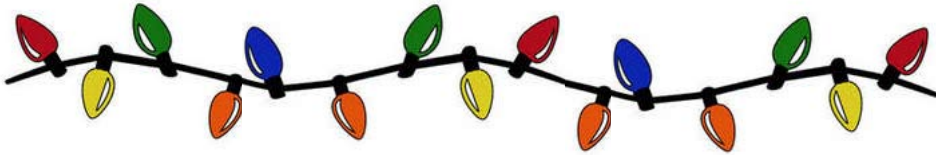
- Make sure the turkey is completely thawed and be careful with marinades. Oil and water do not mix, and water causes oil to spill over, causing a fire or even an explosion hazard.

The National Turkey Federation recommends refrigerator thawing and to allow approximately 24 hours for every five pounds of bird thawed in the refrigerator.

- Before frying, pat the turkey dry with paper towels to keep the hot oil from spattering and popping.
- Slowly lower the turkey into the oil, and maintain an oil temperature of 350°F. Fry turkey for three to four minutes per pound or about 35 to 42 minutes for a 10- to 12-pound turkey.
- Use well-insulated potholders or oven mitts when touching pot or lid handles. If possible, wear safety goggles to protect your eyes from oil splatter.
- Do not stuff turkeys for deep-frying.
- Keep an all-purpose fire extinguisher nearby. Never use water to extinguish a grease fire. Remember to use your best judgment when attempting to fight a fire. If the fire is manageable, use an all-purpose fire extinguisher. If the fire increases, immediately call your local fire department for help.
- Even after use, never allow children or pets near the turkey fryer. The oil inside the cooking pots remains dangerously hot, hours after use.

Bon appétit!!!

# HAVE A HAPPY AND SAFE HOLIDAY SEASON



M X R Y U M R W Z E B S R S X Z R I L S  
 X E M E Y F R I R Y N X E Y Z O O N K K  
 G Z T V D A L S B O I F H A Y O A S P C  
 L U W A P D T I I B S Q S D N E S U U V  
 G Z S P L H A T C M O I I I C L T L Y E  
 V N I V G L C L N K C N U L A M I A W D  
 C N I I L U I E O F E Q G O L E N T F N  
 G L L F R L R C G X Y R N H T X G E K F  
 A E F T F D E C O R A T I O N S H D L G  
 D O S M L U S P A R K S T N T D E A N Y  
 F N W I X O T S L L E B X B G U M A F Q  
 I H H M P R E S E N T S E U E M R R N S  
 E C D A O L R E V O I Q F L A R A K L L  
 L S V S R E M I T L N O E B D Y I O E M  
 G A T G E P Z H A C S B L S E V R F E Y  
 N L Z A U L U M I G E E M D K A J X R D  
 I J O H R G P G G G L N I O C S D U T P  
 J S Z U I S Q A F R Y I N G O D U X J V  
 D Y G S R O O D T U O J Q N L P M U S G  
 B X F P T Q M L H S W Q X P F P I E S N

- |              |          |
|--------------|----------|
| BELLS        | LAMPS    |
| BULBS        | LIGHTS   |
| CAROLS       | METALLIC |
| CHILDREN     | OUTDOORS |
| DECORATIONS  | OVERLOAD |
| EXTINGUISHER | PIES     |
| FIRE         | PRESENTS |
| FLAMMABLE    | RIBBON   |
| FLICKERING   | ROASTING |
| FLOCKED      | SPARKS   |
| FRAYED       | STAPLES  |
| FRYING       | STAR     |
| GFCI         | STUFFING |
| HOLIDAYS     | TIMERS   |
| INSTRUCTIONS | TINSEL   |
| INSULATED    | TREE     |
| JINGLE       | TURKEY   |
| LADDER       | WRAPPING |

Solution can be found on JPL's Safety Website <http://safety/News/>