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## Eco-tip: Drone displays offer patriotic alternative to fireworks

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This Independence Day, some lucky Americans will attend celebrations that not only express the joy of our country's independence but also show special patriotic consideration for our veterans, our beloved pets and the American environment.

This special consideration will be delivered by drones, and Santa Paula is one place where a drone show will replace fireworks on Thursday.

John Adams, a signer of the Declaration of Independence and America's second president, said the Fourth of July "ought to be solemnized with pomp, parade, bonfires, and illuminations from one end of this continent to the other," according to the website of the American Pyrotechnics Association. The "illumination" provided by drone shows seems to fit the intention of this founder, and it avoids some of the drawbacks of fireworks.

According to a press release issued by Karen Grennan, public information officer for the Ventura County Air Pollution Control District, "dangerous levels of very small particles can be caused by Fourth of July fireworks," causing air pollution that can be unhealthy, especially for children, older adults and people with existing respiratory conditions. Additionally, toxic metals like strontium and barium, which produce the vibrant colors of some fireworks, can persist in the environment.

"Illegal fireworks are known to contain additional toxic metals such as lead," the district's release said.

Al Guilin, co-chair of the Rotary Club of Santa Paula's fireworks committee, which organized the drone show in coordination with the city, added the drone show is "also better for some pets and vets" than fireworks. Explosions can scare dogs and cats and can trigger memories or induce stress for some veterans and others.

Ginger Gherardi, the committee's other co-chair, pointed out the one drawback of drone shows: cost. The fireworks show originally planned for Santa Paula would have cost \$30,000. The drone show will cost \$40,000.

However, Guilin noted, the cost of fireworks had been rising dramatically each year, while the cost of drones seems likely to fall with improved technology and more companies offering the service. To compensate for the additional cost, the Rotary Club is seeking donations for the event. To contribute, contact Guilin at 805-625-0062.

More significantly for Santa Paula this year, the Bakersfield-based fireworks company contracting with the Rotary Club simply announced they would be unable to perform due to insufficient pyrotechnics personnel.

See ECO-TIP, Page 4A

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# Eco-tip

Continued from Page 3A

Santa Paula's celebration will take place starting at 5 p.m. Thursday at Harding Park, 1300 E. Harvard Blvd. Food, vendors and entertainment will culminate in a show featuring 150 drones from 9-9:30 p.m.

This will be Ventura County's first drone-based Fourth of July celebration, but Visit Ventura, a nonprofit promoting tourism in partnership with the city, led the way with a drone show commemorating the X Games last year.

The organization also contracted with Sky Elements Drone Shows this year to provide five drone shows, some

featuring 500 drones, in celebration of X Games 2024. I saw the first show at the Ventura Harbor last week, and it was spectacular.

Of course, drones use electricity and batteries, both of which also have environmental implications, but they are reusable many times, diminishing the impact of each use. Other alternatives to fireworks are one-time consumable items, with significant drawbacks.

Last year, the U.S. Forest Service, trying to reduce fires on public lands, promoted glow sticks, noisemakers and cans of red, white and blue Silly String as alternatives to fireworks on Independence Day. Although celebrants were urged to "leave no trace," these alternatives were messy, and the recommendation was not made this year. The

"string" is a plastic resin combined with a substance causing foam. It is propelled by a chemical solvent and mixed with colorants. Along with the "string," empty cans are so often littered that "party streamers" have been banned for use during special events in some jurisdictions.

Following the success of the Visit Ventura and Santa Paula Rotary drone shows, expect to see many more such shows in the future.

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