## **Searching for Kennedy**

At its height, the search for John F. Kennedy Jr.'s plane ranged over 1,000 square miles. After debris was discovered, the search immediately shifted and focused on an area south of Martha's Vineyard. Here's a look at some of the equipment and techniques involved in the operation.



#### LONG RANGE SEARCH

When the location of the target is unknown, parallel searches are used. Two Coast Guard HH-60 helicopters and other aircraft traced Kennedy's entire route.

### SHORT RANGE SEARCH

Localized searches are executed by using floating debris as their focal points. Both aircraft and watercraft, such as RHIs (Ridget Hull Inflatables) use methodical Sector and Expanding Square searches to comb the area.



#### **NIGHTTIME SEARCH**

3 Ships with sonar equipment are used for nighttime searches. The National Oceanic and Atmospheric Administration ship Rude uses a sophisticated sonar device that can scan up to a 1,000-footwide section of the ocean floor.



Source: U.S. Coast Guard; AP research

## **JFK**

## Continued from Page 1

If the beacon did come from Kennedy's plane, it would be the first time searchers have heard it.

An ELT can be triggered manually or automatically upon a crash and emits signals that can be detected by satellites and air-

Earlier in the day, searchers found little more than the fragment of a headrest and some insulation. Saturday's search had yielded a wheel, a headrest, part of a plane support, a prescription bottle belonging to Kennedy's wife and a piece of baggage belonging to his sister-

The Kennedys stayed close to the Hyannis Port compound that has been the family's gathering point in so many times of triumph and tragedy. In the afternoon, Ethel Kennedy, the widow of Sen. Robert F. Kennedy, and other family members went

Kennedy's sister, Caroline Kennedy, whose whereabouts had been unclear since the accident, awaited word on New York's Long Island.

It was not known why she did not attend the wedding or join the family in Hyannis Port. She and her family were said to have just returned from a Western rafting trip.

Mary Medeiros, a family baby sitter, said there were a lot

of tears inside the compound. At Our Lady of Victory Church near Hyannis Port, where several Kennedys have been married, the Rev. Stephen Dawber told churchgoers to pray for young Kennedy and his passengers, "that God give them peace and comfort.

Columnist Rowland Evans, at the compound for the wedding, told CNN that on Saturday morning, "It was going from a little piece of heaven into the shadowy depths. Everybody felt the heavy weight, the burden of real sorrow.

Nobody had, I think, great hopes even then," he said.

Some experienced pilots said relatively new pilot like Kennedy may have been ill-advised to fly at night, while others said it was routine.

A source who is friendly with the Kennedy family told the Associated Press that Kennedy had intended to fly earlier in the day, but his sister-in-law, an investment banker, had to work late.

Larrabee called yesterday's operation a "search and rescue" but conceded that the normal survival time in 68-degree waters — about 12 hours — had long passed.

# Camelot's sole survivor

## Caroline Kennedy remains private during family

NEW YORK (AP) — She was the little girl who walked her dad to the Oval Office each morning and rode a pony on the White House lawn. Grown up now with a family of her own, Caroline Kennedy appears to be the last survivor

Yesterday, the day after her brother's plane went missing, Caroline Kennedy stayed far from the media and far from the rest of the Kennedy clan gathering in Massachusetts.

Kennedy, husband Edwin Schlossberg and their children aged 12, 9 and 6 were waiting out the search at a home they have in the Hamptons on eastern Long Island, a summer playground for the rich and famous.

It was a characteristically discreet way for a very private woman to handle her very public life.

Kennedy, who had been out West rafting with her family before her brother was reported missing, returned to Long Island Saturday. She had not planned to attend the wedding of Rory Kennedy at Hyannis Port, Mass., but it was not clear why

JFK Jr., 38, was en route to the wed-

ding when his plane disappeared. His wife, Carolyn Bessette Kennedy, and her sister, Lauren Bessette, were also on board.

Caroline Kennedy, 41, was extremely close to her brother. They were children together in the brief presidency that came to be known as Camelot after the legend of King Arthur, going on 6 and 3 when their father was assassinated in 1963

Together, they endured the murder of their uncle, Robert F. Kennedy, in 1968, and adjusted when their mother, Jacqueline Kennedy, married Greek shipping magnate Aristotle Onassis the same year. They did well in private schools in New York, avoided drugs and scandals — and were kept far from the rest of the Kennedy clan

'Jackie had made it a strict rule not to allow Caroline and John Jr. to fraternize with their Hickory Hill cousins, author Jerry Oppenheimer wrote in The Other Mrs. Kennedy, his book about Robert's wife, Ethel. Robert and Ethel Kennedy's homestead in Virginia was known as Hickory Hill.

Richard Burke, a former aide to an-

M. Kennedy, D-Mass., book that Caroline had spent time there "but w stuff going on out at Hick especially the problems the having — Jackie just did oline and John there."

As adults, Caroline and joined forces, presenting at preservationists in their mo or, and launching anothe their father's memory. They auction house to sell off 5 from their mother's estate, blocked someone else some of their father's diari

Now, as hopes fade for brother alive, "There's akin of the lonely survivor" said lier, author of The Kennedy ican Drama.

When Caroline Kenne Schlossberg, a designer teriors and exhibits, herb as best man, and gave th my life there has just been Mommy, Caroline

Now, there is just the or

# Clinton offers prayers to fam

WASHINGTON (AP) — Saying the Kennedys "have suffered much and given more" as a family, a grim-faced President Clinton offered the prayers of a nation yesterday as authorities scanned the ocean in hopes of finding the son of the one president Clinton personally idolized

Arriving at the White House from Camp David, Md., Clinton thanked the Coast Guard and other searchers who are trolling the coast off Martha's Vineyard, where wreckage from a private plane carrying John F. Kennedy Jr., his wife Carolyn Bessette Kennedy and sister-in-law Lauren Bessette began washing ashore on Saturday

"At this difficult moment, we hope the families of these three fine young people will feel the strength of God, the love of their friends and the prayers of their fellow citizens," Clinton said.

His words rang with personal loss. The Clintons have spent time with the Kennedys during vacations on Martha's Vineyard, sharing boating excursions and dinners at a compound once owned by Kennedy's late mother, Jacqueline

Kennedy Onassis. "For more than 40 years now, the Kennedy family has inspired Americans to public service, strengthened our faith in the future and moved our nation forward," Clin-

ton said. "Through it all, they have suffered much and He said Kennedy and his wife, who were married almost three years ago, "have captured our imagination and

won our affection" in recent years. He said he would always be grateful "for their kindnesses to Hillary and Chelsea and me. Clinton stepped off his helicopter with his wife and daughter. They locked hands and walked in unison across

the lawn, Hillary Clinton sandwiched in the middle. When he finished speaking, Clinton swallowed hard and disappeared into the White House.

The president spoke just a few feet away from the Rose Garden where, as a teen-ager, he met President Kennedy on July 24, 1963

Back then, Clinton was one among several attending Boys Nation. When he graduated high school, young Clinton scribbled his name below a photograph of himself and Kennedy in the yearbooks of his friends

Clinton is unabashed in his admiration of Kennedy, and weaves Kennedy influences into his policies and actions in a variety of ways. For example, when Clinton journeyed to Africa

HOW IT WORKS

Source: NASA

last year, he made Ghana his first stop because it w nation where Kennedy's Peace Corps began operating Brian

He once said Kennedy's emphasis on publical 'taught me to believe in America. ... He madeit and noble and good. The best we can do is to keep burning.

According to David Maraniss' 1995 biography, Class, Clinton wrote a letter to his mother whiles Georgetown, telling her that a friend who had with Kennedy, Tommy Caplan, was preparing to spen an especially precocious toddler.

"At this difficult moment, we hope the families of these three fine young people will feel the strength of God, the love of their friends and the prayers of their fellow citizens."

'John Kennedy Jr. is supposed to visit hima town sometime this year," Clinton wrote. "Heist years old, but this boy says he is a really smartly

As an adult, the younger Kennedy found his way the White House — on Clinton's invitation.

When Clinton announced the first woman to a U.S. space shuttle mission, Kennedy was there. dience. He brought along his wife in February Clinton played host to a state dinner for British Par ister Tony Blair.

Kennedy bowed as he greeted Hillary Rodhin and Cherie Blair, while Bessette removed her long gradu gloves before shaking Clinton's hand.

In Los Angeles, Vice President Al Gore cancel day brunch that was to raise funds for his president Campaign. He attended Mass at the Sacred Heat Campaign. and told reporters afterward his prayers were Kennedy family.

'Above all, we are reminded of the sacrifica Kennedy family, and how precious and fragile life is

## 1998 a record low for violent crime

of about 8.1 million violent crimes last year, a 7 percent drop from 1997 and the lowest number reported since the Justice Department began tracking the figure in 1973

A report released yesterday called the one-year drop "marginally significant," driven by a small but significant decline in aggravated assault rates. "From 1997 to 1998, no significant changes in

rates of rape or sexual assault, robbery or simple assault occurred," this year's National Crime Victimization Survey said. There were slight declines in robbery and simple assault, but rape and sexual assault actually rose slightly from 311,000 in 1997 to 333,000 in 1998. Rape and sexual assault were the only two crimes to show an increase during the period.

The general 1998 decline continued a downward trend that began in 1994, the survey said.

Attorney General Janet Reno said there is no one reason for the drop. But she gave Clinton administration policies credit for combining the effects of

several strategies. "It's because of more police officers on the streets, tougher sentences, more prosecutions, better prevention programs, a healthy economy and a new approach to crime fighting that involves a closer working relationship between communities and

federal, state and local law enforcement," Reno said. Republicans said they are relieved over the decline but warn that crime rates remain unacceptably high. They also have pointed to passage of anticrime legislation since the GOP took majority control of Congress in 1995.

# NASA prepares for launch of X-ray telescope

est, mightiest, priciest X-ray telescope is about to embark on a five-year voyage to stare deep into the hearts of galaxies and search for signs of black holes.

The Chandra X-ray Observatory, a 4 1/2-story colossus stuffed into space shuttle Columbia and due to lift off tomorrow, is 10 to 100 times more powerful than any of the dozen or so X-ray telescopes previously placed in

If words glimmered in X-rays, Chandra could read a newspaper from a half-mile away or make out the letters of a stop sign from 12 miles away.

"We can make Superman jealous, I guess, with our X-ray vision," NASA manager Ken Ledbetter said.

The astronauts, led by NASA's first female space shuttle commander, Eileen Collins, will release Chandra with the flick of a switch seven hours after launch. It will be another month before the telescope's eagerly awaited observations begin.

X-rays are produced by quasars, galaxies and remnants of exploded stars but are invisible to ground-based

They would go right through flat mirrors, like those used to focus light on the Hubble Space Telescope, or the lenses used in many smaller telescopes, so Chandra uses conical mirrors. X-rays will glance off the sloping glass at a shallow angle like pebbles skipping across a

"This is an age that we live in where superlatives are used in everything from sports to politics, probably a little bit too much," said Martin Weisskopf, a NASA sci-

## Looking into the unseen universe

The largest and most powerful X-ray telescope ever to be launched will leave aboard the space shuttle July 20. Chandra, a Hubble-caliber observatory is meant to detect faint sources of cosmic X-rays, such quasars, exploded stars and possibly black holes. Here's a look at the Chandra X-ray Observatory

## Aspect camera stray light shade With the sunshade door open, X-rays enter the high Solar array Spacecraft module assembly 2 Four sets of cylindrical mirrors within the assembly reflect the X-rays through.. 3 ...transmission gratings. This makes images sharper before they reach the high resolution camera and the CCD imaging spectrometer\* Data from the telescope is sent to Earth

entist who has been working on the project for two decades. "But I can't help but use those superlatives

The telescope, built by TRW Inc., cost \$1.5 billion to develop. Throw in the shuttle ride and five years of orbital operations, and the price jumps to \$2.8 billion, making it one of NASA's most expensive science pro-

with this observatory. They are really well based.

Chandra — named for the late astrophysicist who won a Nobel Prize — is the third of NASA's four so-

called Great Observatories. The first was Hubble second was the Compton Gamma Ray Obe Ruth a

With Chandra's help, astronomers hope how much so-called dark matter is out! where it is and more about the matter swit black holes and the high-energy jets of matter ing away from them. They also hope to be culate the distance to celestial objects, use timating the size and age of the universe.

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