

An Indian – American Woman in space; Kalpana Chawala

KALPANA Chawla said that she never dreamed, as a child in Karnal, that she would cross the **frontiers** of space. It was enough that her parents allowed her to attend engineering college after she graduated from Tagore School.

After a Bachelor of Science degree in **aeronautical** engineering, against great **opposition** from her father, she went for a master's degree to the United States of America. She later earned her Ph.D. in **aerospace**



engineering. Kalpana Chawla was the first Indian–American woman astronaut to **blast off** from the launch pad at Cape Canaveral, Florida, and participate in a successful mission in space. Her family from India **cheered** along with staff at the Kennedy Space Center as they watched the Columbia **lift off**.

Kalpana was born in Karnal, Haryana, but was a **naturalised** U.S. citizen, married to flight instructor Jean-Pierre Harrison. Besides being an astronaut, she was licensed to fly single and multiengine land airplanes, single-engine seaplanes and **gliders**. She was also a certified flight instructor. After qualifying as a pilot, Kalpana began to consider another challenge: applying to NASA's **space shuttle program**. She was first hired as a research scientist at NASA. In 1994 she was selected by NASA for training as an astronaut.

When asked what it was like being a woman in her field she replied, "I really never, ever thought, while **pursuing** my studies or doing anything else, that I was a woman, or a person from a small city, or a different country. I pretty much had my dreams like anyone else and I followed them. And people who were around me, fortunately, always encouraged me and said, 'If that's what you want to do, carry on'."

Kalpana's first space mission in the space shuttle, Columbia, was 15 days, 16 hours and 34 minutes long. During this time she **went around** the earth 252 times, travelling 10.45 million kilometres! The **crew** included a Japanese and a Ukrainian astronaut. The crew performed experiments such as **pollinating** plants to observe food growth in space, and tests for making stronger metals and faster computer chips — all for a price tag of about 56 million dollars.



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On the Saturday night when the news about the Columbia disaster **broke**, there was shock and **disbelief**. The town of Karnal spent a **sleepless night** as thousands of households **stayed glued to** their television sets in the hope that Kalpana and the crew had **somehow** survived. A journalist wrote:

*She was a heroine. It takes **enormous** ability to become an astronaut. You need to know a lot about everything, from biology to astrophysics to aeronautical engineering. In this age of super-specialisation, you must have **encyclopaedic** knowledge to be an astronaut. Her achievement is **awe-inspiring**.*

For millions of young Indians, the story of Kalpana Chawla, a girl from a small town who touched the skies, had become an inspiration. In a message that she sent from aboard the space shuttle, Columbia, to students of her college in Chandigarh, Kalpana said, “The path from dreams to success does exist. May you have the vision to find it, the courage to get onto it... . Wishing you a great journey.” There will surely be many who **start off** on this journey to fulfil their dreams.

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Vocabulary

- Frontier** (noun) – The extreme limit of achievement in a particular area. सीमा
- Aeronautical** (adjective) – Relating to the science or practice of building or flying aircraft वैमानिकी
- Opposition** (noun) – resistance, antipathy, enmity, objection, dissent, criticism विरोध
- Aerospace** (adjective) – the branch of technology and industry concerned with both aviation and space flight.
- Blast off** (phrasal verb) – (of a rocket or spacecraft) take off from a launching site उड़ान भरना
- Cheer** (verb) – to give a loud shout of praise or encouragement खुश होना
- Lift off** (phrasal verb) – (of an aircraft, spacecraft, or rocket) take off, especially vertically उड़ान भरना
- Naturalised** (adjective) – someone who has officially become a citizen of a country in which they were not born. देशीयकृत
- Glider** (noun) – a light aircraft that is designed to fly without using an engine
- Space shuttle program** (noun) – The Space Shuttle program was the fourth human spaceflight program carried out by the U.S. National Aeronautics and Space Administration (NASA), which accomplished routine transportation for Earth-to-orbit crew and cargo from 1981 to 2011.
- Pursue** (verb) – be engaged in, be occupied in, proceed with
- Go around** (phrasal verb) – spin; revolve. गोल घूमें
- Crew** (noun) – team, company, unit, party, working party, force चालक दल
- Pollinate** (verb) – to take pollen from one plant or part of a plant to another so that new plant seeds can be produced: परागण करना
- Break** (verb) – (of news or a scandal) suddenly become public. सार्वजनिक हो जाना (खबर)
- Disbelief** (noun) – incredulity, incredulousness, lack of belief, scepticism, doubt अविश्वास
- Sleepless night** (phrase) – one during which you do not sleep.
- Stay glued to something** (phrase) – to watch (something) very closely for a long time आंखें (टेलीविजन) पर टिकाना
- Somehow** (adverb) – Someway, one way or another किसी तरह से

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20. **Enormous** (adjective) – boundless, immeasurable, limitless, infinite, very big, great बहुत बड़ा

21. **Encyclopaedic** (adjective) – Relating to encyclopedias or information suitable for an encyclopedia. विश्वकोश

22. **Awe-inspiring** (adjective) – amazing, stunning, stupendous, astonishing, awesome, extraordinary विस्मयकारी/अदभुत

23. **Start off** (phrasal verb) – begin to travel or move. शुरू करना

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