

# A SIDEWALK ASTRONOMER

A FILM ABOUT ASTRONOMY, COSMOLOGY & JOHN DOBSON

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### **35 Who Made a Difference: John Dobson**

*Come one, come all. Share the sky with the father of sidewalk astronomy*

An elderly man with a white ponytail lies in wait on a city sidewalk with a small solar telescope specially designed so that a person can view sunspots without damaging the eye. As a group of tourists approaches, he begins to twirl a lariat and jump nimbly in and out of the spinning loop. "Come, come see the sun," he cries to the startled tourists. And they do come, of course, because they have been ensnared by John Dobson.

John Dobson, the father of sidewalk astronomy, the designer of a portable mount that supports his large, inexpensive telescopes, and, perhaps, astronomy's greatest cheerleader, brought the farthest stars to the man on the street. He has just celebrated his 90th birthday,, and the years have not slowed him down. Barry Peckham, vice president of the Hawaiian Astronomical Society, says, "He has two states of being: one is sleeping and one is talking." For nearly four decades he has gypsied around the world, corralling unsuspecting citizens and tourists, and with his kinetic energy and his instinct for the homely analogy ("If the sun were the size of a basketball, Jupiter would be the size of a grape, and the Earth would be the size of a very small grape seed"), making them look at things they never knew were there.

The night is full of wondrous things—giant galaxies that look like pinwheels, clusters where stars swarm like bees, gauzy nebulae adrift in the Milky Way—but most of these lie beyond the capacity of the human eye. A large telescope—the larger the better to gather light—makes these objects visible. Says legendary comet-hunter David Levy, borrowing a thought from Bob Summerfield, co-director of Astronomy To Go, a traveling star lab: "Newton made telescopes for astronomers to observe the universe; John Dobson makes telescopes for the rest of us."

Nearly a million people have looked through Dobson's telescopes, which he constructs from castoff pieces of plywood and scraps of two-by-fours, cardboard centers of hose reels, chunks of cereal boxes and portholes from old ships. He puts his scopes on portable mounts that swivel sideways and up and down. "The Dobsonian Revolution was with just letting people look through the big telescopes, which was an extraordinary thing to do," says Levy. "I think every advanced amateur astronomer in the world has at least one Dobson telescope."

Today Dobson's influence reaches far from his small apartment in San Francisco. For transportation costs, room and board and a small honorarium, he still gives lectures and teaches telescope-making at star parties, at colleges and museums, and to amateur astronomy clubs. "They fly me all over the place," he says, to such far-flung destinations

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as Chile, Italy, New Zealand, India and Russia. In 2006, he will travel for ten months to China and Siberia, among other places. Though Dobson seems oblivious to the impact he makes on others, he is a cult figure to thousands of amateur astronomers who have read about him in books and articles. When he shows up at a local astronomy club, "It's like traveling with a movie star," says Donna L. Smith, his personal assistant. "He did more to inspire them than he can imagine." And a movie star he is. Jeffrey Fox Jacobs' documentary, *A Sidewalk Astronomer*, about Dobson, premièred this year and is available on DVD and videocassette (from [telescopepictures.com](http://telescopepictures.com)).

Born in China, grandson of the founder of Peking University and son of a zoology teacher there, Dobson enrolled at the University of California at Berkeley in 1943 to become a chemist (a profession he later practiced for a while). Then, in 1944, Eastern religion lured him to a San Francisco monastery of the Vedanta Society of Northern California. As a monk, he began building telescopes surreptitiously, using found materials. But as he moved on to larger telescopes, perfecting the simple and inexpensive design that would later bring him fame but not fortune, he decided he had to share his experience.

He spent so much time outside the monastery teaching telescope-making and showing neighbors the stars that he was finally asked to leave the religious order. And so in 1967 Dobson found himself a penniless ex-monk, sleeping on a rug in a friend's house in San Francisco. But he continued to scrounge materials to build telescopes, and the next year with other enthusiasts he organized the San Francisco Sidewalk Astronomers, who began setting up telescopes in the middle of the city and attracting lines of people around the block. Dobson and his crew later loaded an old school bus with big telescopes and toured the national parks, deploying Long Eye, Little One, Psychedelic Zebra and the 24-inch behemoth, Delphinium. A park ranger once questioned the appropriateness of the telescopes, saying, "The sky is not a part of the park," to which Dobson replied, "No, but the park is part of the sky."

Dobson's invention is not so much a type of telescope as a system of making and mounting one. (Basically, he uses the same type of reflecting telescope devised by Sir Isaac Newton in 1668.) But Dobson's mirrors are thin, light and cheap, and made from the bottoms of glass gallon jugs instead of optical glass. He created a mount that made weights unnecessary. Where an eight-inch amateur telescope with accessory widgets can cost \$2,400, a basic eight-inch telescope can be made at home for \$200.

His telescopes have been replicated thousands of times, not only by amateur builders but by commercial manufacturers who advertise them as "Dobsonians." Dobson himself earns no royalties. What matters to him is getting big telescopes out there. He explains: "It was high time for somebody to show the amateurs that they could make bigger telescopes" than the little tiny ones they had been running.

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Notes San Francisco sidewalk astronomer Kenneth Frank, "He makes you look at things in almost a childlike light." Dobson thinks of it in another way: "Most of the things I say are within everybody's grasp, but then I try to lead them out for a reach."

Leading people out for a reach is what bothers some astronomers. His attempted reconciliation of a religious view with a scientific one has made for critics. "It's not that he thinks outside the box," reflects filmmaker Jacobs. "He doesn't even see the box." Or, for that matter, believe in the Big Bang. "First of all, they have it coming out of nothing and that's impossible," he says. "And then they have it coming out of a black hole and that's just as impossible." Dobson believes in something bigger than the bang. "He thinks he's got the secret to the universe," complains one astronomer. Chortles Dobson, "Hundreds of years ago they would have already burned me at the stake."

Immolation aside, Dobson has left an enduring astronomical legacy. He is fond of quoting the New Zealand astronomer Graham Loftus: "What we need is a big telescope in every village and hamlet, and some bloke there with that fire in his eye who can show something of the glory the world sails in." He could, of course, have been talking about his friend John Dobson.