

Sun-Earth Day Highlights (06-20-08)

Eclipse 2008: China

Interview with Fred Espenak: Astronomy Career

[Troy Cline]

My name is Troy Cline and welcome to another Sun-Earth Day Highlights podcast. A total solar eclipse will occur on August 1, 2008 and will be visible from within a narrow corridor that will traverse half the Earth. The path of the Moon's umbral shadow will actually begin in Canada and extend across northern Greenland, the Arctic, central Russia, Mongolia, and China. The Sun-Earth Day team plans to bring that event to you with a live webcast from China. You can get more information about that webcast on the Sun-Earth Day home page.

In today's podcast 'eclipse expert', Fred Espenak, will tell us about his career at NASA and 'how' he became an astronomer.

So what influenced Fred's decision to pursue a career in astronomy? When did he realize that he wanted to be an astronomer? What led to his interest in working at NASA's Goddard Space Flight Center? What does he enjoy most about his job?

Let's find out...

[Fred Espenak]

I think once I had decided that I wanted to pursue a career in astronomy, once I did a little bit of reading on it, it was clear that what I really needed to do was study physics and math. The astronomy comes really after that to be a good astronomer you have to be a physicist and to know enough math to be able to use the physics. So that's what got me started in my college career was studying physics.

One event that I recall was when my parents woke me up, got me out of bed, it seemed like the middle of the night but it was probably only 10PM, but it was when the Echo satellite passed over head. I think it was around 1958 or 1959 and I still remember getting up and seeing that satellite moving across the sky. It was at the dawn, the birth, of the space age.

Another thing that I recall as a boy getting interested in astronomy was, I must have been about 7 or 8 years old and I was visiting my grandparents out in their summer home in Long Island, and one of the neighborhood boys had a small telescope. I remember taking a look at the moon through that telescope for the first time and I think I pestered my father for 2 years after that before I got my first telescope. That just ignited my interest in astronomy.

Well I remember, I think I was in high school at the time, there was one book, one popularized book that came out called “Red Giants and White Dwarfs” by Robert Jastrow. He was the sort of Carl Sagan of his day, popularizing astronomy and I remember reading that book and the discussion in there and very clear layman’s terms about stellar evolution and black holes. That really captivated me in terms of a public spokesman for astronomy.

Probably most of what I learned about astronomy when I was a young high school student came from magazines like Sky and Telescope magazine or books that I would take out of the library.

My career choice, I had to make a decision at some point because as much as I loved astronomy, my first love and still a passion is dinosaurs. But that probably true of most every boy in America. But it dawned on me I think during high school that the job opportunities for vertebrate paleontologists that actually work of dinosaur bones....there are probably a hundred of them in the world. So compare that to astronomy and astrophysics, there were a lot more job opportunities.

When I was finishing up my work in graduate school, it was time to start looking for work in the real world and get out of the school environment which was a scary thing. One of my classmates from graduate school who had graduated a year ahead of me had come down to Maryland and was working as a computer contractor here at Goddard. I talked to him a little bit about it. He said that the work was real interesting down here so I ended up coming down and interviewing with his company and actually working as one of the beltway bandits, one of the contractors for a few years before I got hired on at Goddard itself.

I really enjoy interacting with a lot of emails and questions people ask about eclipses. I get questions from a lot of school kids about using eclipse diagrams or when the next eclipse is going to take place. A lot of their input inspires me for some of the content that ends up getting added to the eclipse page. Like about a year ago from all of these questions, a lot of questions were, “When is the next eclipse in San Francisco? Or When is the next eclipse in Chicago?” and I thought really hard about this and we got a program up and running on the website called the Solar Eclipse Explorer. What anybody can do with that little program is use a drop down menu to pick any city from around the world. If you don’t have, if the city is not included, you can just plug in the latitude and longitude. Then it’s just a matter of hitting a couple of buttons at that point to generate a table describing all of the eclipses visible from that city for a hundred years in the past or future.

[Troy Cline]

What advice can you give others who share your interest in eclipses?

[Fred Espenak]

I think that the beauty of solar eclipses is something that anybody can appreciate and what I usually tell people is that if they ever have the opportunity to see a

total solar eclipse or if they're on a vacation someplace and a total solar eclipse just happens to be taking place near by, it happens, I always urge people, 'Get into the path of the total eclipse". A lot of people have emailed me and said, 'Well I'm going to be on Caribbean Island and it's outside the path but I'm going to see 98% of the eclipse or 99% of the eclipse. That's good enough, right?" NO. The difference between a 99% partial eclipse and a 100% total eclipse is greater than the difference between 0% partial and 99% partial. That extra 1% gets you into the actual path of the moon's shadow and that's where you have to go to see the sun's corona and the darkening of the daylight and to see the stars and planets revealed in the daytime sky. It's an absolutely spectacular thing that nobody should miss if they get a chance to see it. The sad thing about it is that statistically if you're at any one given point on the earth's surface, the odds are that you'll only get an eclipse at that point once every 375 years. So most people live their lifetimes without ever having had a chance to see an eclipse... if they stay on one spot on the earth's surface. That means most of the time you have to be willing to travel and go around to see an eclipse.

[Troy Cline]

I would like to thank Fred Espenak for taking time to share all of this amazing information with us and we look forward to more 'eclipse' chats in the future!

In upcoming podcasts we'll hear from Lou Mayo who will fill us in on the latest Sun-Earth Day supported eclipse activity for Amateur Astronomers. We'll also hear from the chief editor of Sun-Earth Day's Technology Through Time series, Sten Odenwald, about the latest eclipse additions.

I hope you enjoyed this Sun-Earth Day Highlights podcast. We are very interested in hearing your questions and comments. If you have something to say, just send an email to sunearthday@gmail.com . If selected we'll share it on one of our upcoming podcasts!

For all other details about the Sun-Earth Day program including information about our past SED themes be sure to visit our website at sunearthday.nasa.gov.

Don't forget that you can learn more about NASA by simply visiting www.nasa.gov .