

# The Flint River Observer

## Newsletter of the Flint River Astronomy Club

August 2006

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**Officers:** President, **Curt Cole:** [24e29d55c@speedfactory.net](mailto:24e29d55c@speedfactory.net)  
Vice President, **Steven (Smitty) Smith:** [Saratoga@flinriverastronomy.org](mailto:Saratoga@flinriverastronomy.org)  
Secretary, **Doug Maxwell:** [doug@flinriverastronomy.org](mailto:doug@flinriverastronomy.org)  
Treasurer, **Steve/Dawn Knight:** [sdknight@flinriverastronomy.org](mailto:sdknight@flinriverastronomy.org)  
Board of Directors: **David Ward:** [dward@flinriverastronomy.org](mailto:dward@flinriverastronomy.org) **John Wallace:** [JWCOSMOS@att.net](mailto:JWCOSMOS@att.net) and **Matt McEwen:** [mbmcewen@bellsouth.net](mailto:mbmcewen@bellsouth.net)  
Public Observing Liaison: **Felix Luciano:** [felix.luciano@flinriverastronomy.org](mailto:felix.luciano@flinriverastronomy.org)  
Webmaster: **David Ward** Webmaster (see above);  
Club Librarian: **Curt Cole:** [24e29d55c@speedfactory.net](mailto:24e29d55c@speedfactory.net)  
Event Photographer: **Doug Maxwell** (see above)

**Club mailing address has changed to:** 190 West James Circle, Hampton, GA 30228.

Web page: [www.flinriverastronomy.org](http://www.flinriverastronomy.org)

Discussion group: [FRAC@yahoogroups.com](mailto:FRAC@yahoogroups.com)

Please notify **Steve Knight** if you have a change of address, telephone number and or new e-mail address.

**Club Calendar:** Thursday, August 10, 7:30 PM, Club Meeting at UGA campus, Griffin. Friday, August 11, 7:30 PM, meet at **Fernbank Science Center** (NOT the Fernbank Museum of Natural History) or carpool for a planetarium program about the planets, followed by viewings through the center's 36" scope (weather allowing.) The Planetarium program, "Field Guide to the Solar System", begins at 8:00 PM. No late admissions! \$4.00 adults, \$3.00 students/seniors. The observatory is open 8:00-10:30 PM. No admission fee is stated. Info at <http://fsc.fernbank.edu/>

A **train /rafting trip** on the Great Smoky Mtns. Railroad & the very easy Nantahala River, NE of Andrews, NC, is planned for August 19/20. If rafting isn't your cup of tea, you can just do the train trip. The highway runs beside the river so you could arrive early and scout it out to decide if you want to raft it. Campgrounds/motels are in the area. Exact details are still in the works but the tentative schedule is to meet in Bryson City, NC by 10:00 AM Saturday the 19th. Ride the train (\$38.00 adult, \$18.00 kids) into the Nantahala Gorge and back. Train departs 10:30 AM for the 4.5 hour trip. Reservations required. On Sunday the 20th, meet at Carolina Outfitters at 10:00 AM for the rafting. Minimum age for rafting is 7, minimum weight is 60 pounds. Cost is \$14.00. Time on the river is about 2 hours. You can make a second run the same day for half price if you finish the first one early enough. Last trip at 2:30 PM.

Great Smoky Mtns. Railroad web site is <http://www.gsmr.com/>.

Carolina Outfitters web site is <http://www.carolinaoutfitters.com>

**Calendar of Events:** Jupiter's Moon Callisto is the only Moon visible the evening of August 22/23, from on or about 23:00 to 00:23 EDT. And again on August 30 from 00:11 to 00:31 EDT.

**Cox Field Club Observings:** Friday & Saturday, August 25, 26, dusk.

**July Meeting Minutes:** July club meeting attendees were **John Wallace, Doug Maxwell, Steve Knight, Steve "Smitty" Smith, Curt & Irene Cole**, and visitors (now members) **Tom & Brit Danei**. Some of you may remember visitor **Danei** from 6 or 8 years ago. **Tom** had a big Dob and a little Volkswagen. They paid their dues at tonight's meeting. FRAC membership now consists of 28 households. (27 with **Chuck's** departure.) John will send in the AL dues. We discussed setting a budget. We decided to continue the club's insurance. The possibility of either a rafting trip or a trip to Fernbank Science Center was discussed and the majority wanted the Fernbank trip, so we've scheduled an August trip. **Tom** offered to help produce a video about the club that we could use to promote the club. We'll continue to look into this as finances allow. We have 5 Yahoo Groups but only 3 seem to be needed: Frac, FRAC-a, and FRAC-GSV. So we'll stop using the other two, FRAC-2 and gsvdiscussion, since they really aren't used anyway. A special annual prize for the club member that attends the most club meetings (the prez & his/her spouse are ineligible) and one for the member that attends the most scheduled Cox Field observings was instituted. The sign-in sheet from each meeting will be used for the former, and reports from club members at Cox will be used for the latter, beginning this year with the July 21 Cox Field observing. At least two members must be simultaneously present at Cox for that evening to count toward the award. So if you attend an observing at Cox, report to Curt who was there. A running tally will be kept on the Yahoo group. The prizes will be awarded at the December meeting. Attendance at that meeting is not required to win the award. In case of a tie for high score, a drawing, among the members that have tied, will be held at the December meeting. The board members may change these rules as needed.

**August Meeting:** As of this writing no program is scheduled for the August meeting. Volunteers are needed to spread their knowledge so feel free to do a program for the club. We also have an opening for Program Chairman.

**Public Observings:** We continue to get requests for observings. The weather just is not cooperating lately, as is usually the case in Georgia summers. Currently scheduled for Aug. 25 at Cox Field is Cub Scout Pack 79 from Tyrone.

**Fun Facts:** "Why is Jupiter so Bright?" How brightly a planet shines in our sky depends on four things: how big it is, how far away it is, how brightly the Sun shines on it, and how efficiently it reflects this sunlight. Jupiter scores well on two of these. It's big – really big, 11 times as wide as Earth, with about 121 times as much surface area. Also, it is covered with brightly reflective clouds. On the

downside, this giant planet is quite far from us (farther than any other naked-eye planet but Saturn) – and also far from the Sun. In fact, the sunlight hitting Jupiter is only about 1/25 as bright as sunlight on Earth. Nevertheless, that huge size tops the other factors and makes Jupiter look very bright. It was called the King of Planets long before astronomers figured out that it really is the biggest world in the solar system. (May/June 2006, night sky magazine)

**NASA News:** Mars Reconnaissance Orbiter successfully arrived at Mars on March 10, 2006. Over the next six months, the spacecraft will gradually adjust the shape of its orbit around the Red Planet. NASA's newest spacecraft at Mars has already cut the size and duration of each orbit by more than half, just 11 weeks into a 23-week process of shrinking its orbit. During the two-year science phase, Mars Reconnaissance Orbiter will examine Mars from subsurface layers to the top of the atmosphere. Besides providing information about the history and extent of Mars's water, the orbiter will assess prospective landing sites for NASA robots launching in 2007 and 2009. Additional information about Mars Reconnaissance Orbiter is available at: <http://www.nasa.gov/mro>

#### **MEMBER PROFILE: Felix Luciano**

Felix has been in the Atlanta area for about 13 years and works for the Dept. of Education. He has been a member of FRAC since February 2003 when he first learned about an astronomy club in the South side of Atlanta.

Felix grew up in the Caribbean Island of Puerto Rico, where he has gone several times to the giant antenna at Arecibo. He joined the Armed Forces (Army) and traveled the "world over" several times. His astronomy interest was always present but he actually bought his Orion XT8 telescope in October 2002 along with the books *Turn Left at Orion* and *NightWatch, A practical Guide to Viewing the Universe*, also David Levy's *Plainsphere* from a local Barnes and Noble bookstore. He looked at the skies every night he had clear skies and started to learn his way around the skies. That very same year Felix attended his first star party in Chiefland, Florida. There was no turning back after that visit to Chiefland. Astronomy was here to stay for Felix.

Felix is the club's Public Observing Liaison. He helps coordinate some of the public outreach events the club participates on. He also is the club's newsletter editor. Felix was an active participant in the club's first ever-star party at Indian Springs, Jackson, GA.

Felix's other hobby is riding his mountain bicycle on the Clayton County Beach and Volleyball mountain bike trails and around the park in general. He likes to read – mainly - astronomy related articles and or books. He is also reading about astrophotography (Internet articles and personal web sites of folks doing astrophotography). But his main interest remains visual observing and the thrill of getting ready to go out on a given evening to find look for something new or just visit some object previously observed.



## **Celebrating 40 Years of Intent Listening**

By Diane K. Fisher

In nature, adjacent animals on the food chain tend to evolve together. As coyotes get sneakier, rabbits get bigger ears. Hearing impaired rabbits die young. Clumsy coyotes starve. So each species pushes the other to “improve.”

The technologies pushing robotic space exploration have been like that. Improvements in the supporting communications and data processing infrastructure on the ground (the “ears” of the scientists) have allowed spacecraft to go farther, be smaller and smarter, and send increasingly faint signals back to Earth—and with a fire hose instead of a squirt gun.

Since 1960, improvements in NASA’s Deep Space Network (DSN) of radio wave antennas have made possible the improvements and advances in the robotic spacecraft they support.

“In 1964, when Mariner IV flew past Mars and took a few photographs, the limitation of the communication link meant that it took eight hours to return to Earth a single photograph from the Red Planet. By 1989, when Voyager observed Neptune, the DSN capability had increased so much that almost real-time video could be received from the much more distant Planet, Neptune,” writes William H. Pickering, Director of JPL from 1954 to 1976, in his Foreword to the book, *Uplink-Downlink: A History of the Deep Space Network, 1957-1997*, by Douglas J. Mudgway.

Mudgway, an engineer from Australia, was involved in the planning and construction of the first 64-m DSN antenna, which began operating in the Mojave Desert in Goldstone, California, in 1966. This antenna, dubbed “Mars,” was so successful from the start, that identical 64-m antennas were constructed at the other two DSN complexes in Canberra, Australia, and Madrid, Spain.

As Mudgway noted in remarks made during the recent observance of the Mars antenna’s 40 years of service, “In no time at all, the flight projects were competing with radio astronomy, radio science, radar astronomy, SETI [Search for Extra-

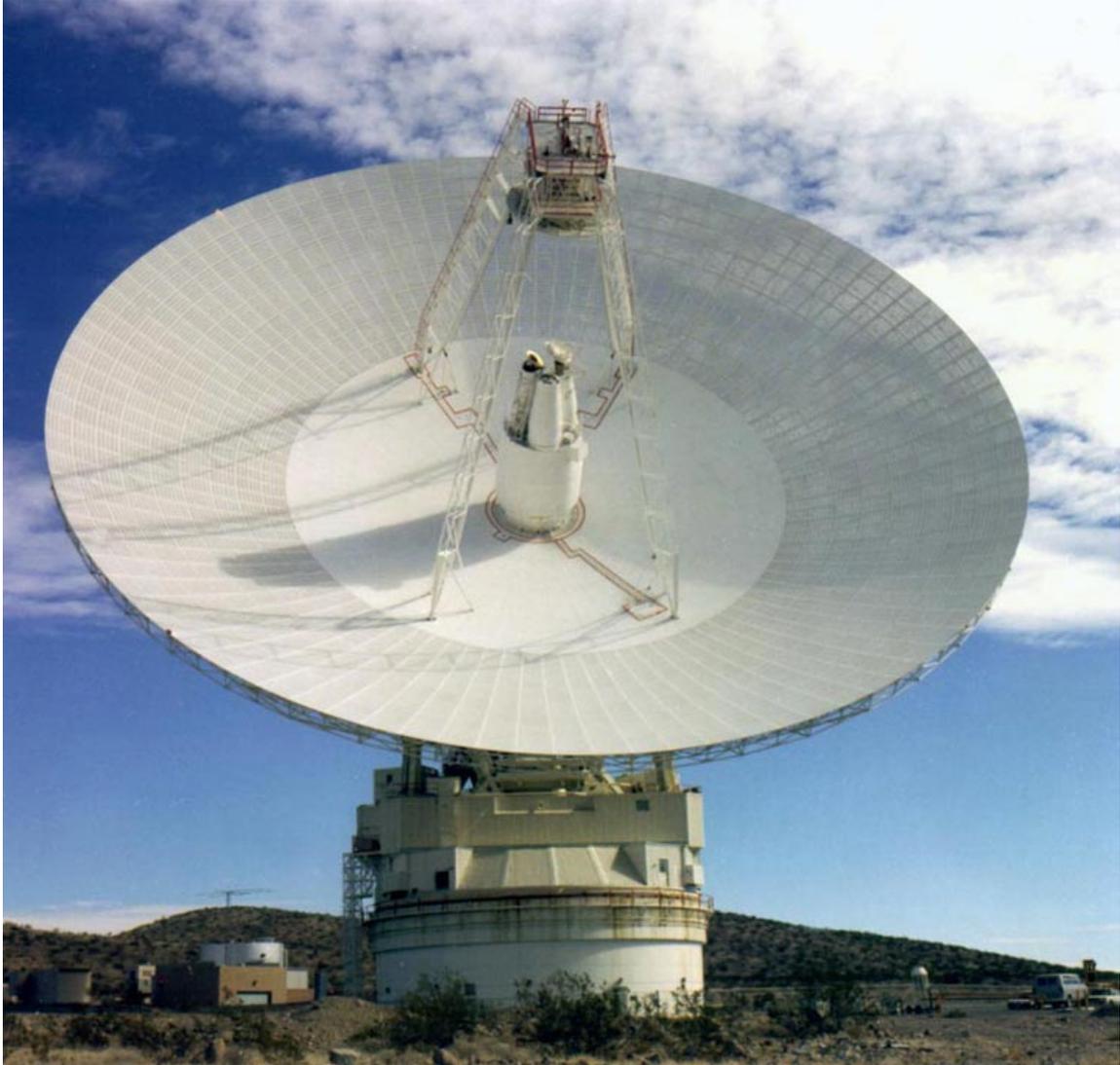
terrestrial Intelligence], geodynamics, and VLBI [Very Long Baseline Interferometry] for time on the antenna . . . It was like a scientific gold rush.”

In 1986 began an ambitious upgrade program to improve the antenna’s performance even further. Engineering studies had shown that if the antenna’s diameter were increased to 70 m and other improvements were made, the antenna’s performance could be improved by a factor of 1.6. Thus it was that all three 64-m DSN antennas around the world became 70-m antennas. Improvements have continued throughout the years.

“This antenna has played a key role in almost every United States planetary mission since 1966 and quite a few international space missions as well. Together with its twins in Spain and Australia, it has been a key element in asserting America’s pre-eminence in the scientific exploration of the solar system,” remarks Mudgway.

Find out more about the DSN and the history of the Mars antenna at <http://deepspace.jpl.nasa.gov/dsn/features/40years.html>. Kids (and grownups) can learn how pictures are sent through space at [http://spaceplace.nasa.gov/en/kids/phonedrmarc/2003\\_august.shtml](http://spaceplace.nasa.gov/en/kids/phonedrmarc/2003_august.shtml) .

*This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.*



Caption:  
*For over 40 years, the "Mars" 70-m Deep Space Network antenna at Goldstone, California, has vigilantly listened for tiny signals from spacecraft that are billions of miles away.*

# August

<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
		<b>1</b>	<b>2</b> First Qtr Moon	<b>3</b>	<b>4</b>	<b>5</b>
<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b> Full Moon	<b>10</b> Club Meeting	<b>11</b> Club trip to Fernbank Science Cntr, 7:30 pm	<b>12</b>
<b>13</b>	<b>14</b>	<b>15</b> Last Qtr Moon	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b> Club trip: Train trip and rafting, Nantahala
<b>20</b>	<b>21</b>	<b>22</b> Jupiter – Only Callisto is visible at certain times	<b>23</b> New Moon	<b>24</b>	<b>25</b> Cox Field Observing	<b>26</b> Cox Field Observing
<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b> Jupiter – Only Callisto is visible at certain times	<b>31</b> First Qtr Moon		

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