

# THE FLINT RIVER OBSERVER

NEWSLETTER OF THE FLINT  
RIVER ASTRONOMY CLUB

An Affiliate of the Astronomical League

Vol. 15, No. 6 August, 2011

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Please notify **Bill Warren** if you have a change of home address, telephone no. or e-mail address.

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**Club Calendar.** : **Fri., Aug. 5:** UGa-Griffin public lunar observing (7-10 p.m.); **Fri., Aug. 12:** FRAC pool party/meal at **Bill Warren's** house (5-6:45 pool play, dinner at 7 p.m.); **Fri.-Sat., Aug. 26-27:** Cox Field observings (at dark).

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**President's Message.** This month we're kicking off a new series of articles entitled "My Favorite Astronomy Books." A different member's selections will be featured in each installment. **Smitty** is in the

leadoff spot (pp. 5-6), to be followed in later issues by the likes of **Phil Sacco, Larry Higgins, me** – and hopefully **you**, too, if you like to read astronomy books and want to participate.

The guidelines are simple: just list, in no particular order, the astronomy books, star atlases, etc., that you've enjoyed or used the most, and send your list to me at my e-mail address on the other side of this page. The books don't have to be current: Smitty's list includes two books that were first published more than three decades ago.

Comments about the books on your list would be helpful to our readers, but aren't required or necessary. They will be lightly edited for grammar and clarity, like everything else that appears in the newsletter. If your submission is too long to fit into one issue, I'll subdivide it into two or more articles for subsequent issues.

The purpose of this series is, of course, to alert our members to some very good astronomy books that they might not know about otherwise.

Astronomy books can be incredibly complex or numbingly boring – but they can also be as inspiring as **Van Gogh's** paintings, **Hemingway's** novels or music by **Alice In Chains**. (Just kidding about the last one.) Here's your chance to tell your fellow FRACsters about the ones that you've enjoyed the most – or simply to find out which books your friends in FRAC recommend.

**-Bill Warren**

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**Last Month's Meeting/Activities.** "April is the cruelest month," wrote British poet **T. S. Eliot** in *The Wasteland* (1922). This year for FRAC, however, June and July have been worthy candidates for that unhappy superlative. As if three deaths in the FRAC family (see p. 2) were not enough, we've also been subjected to unbearable heat, drought, sudden windstorms and thunderstorms, and even tornadoes. Another Gordon College observing was clouded out, this one in late June. Ditto our club observings in early July and our UGa-Griffin observing for that month as well.

**Dwight Harness, Tom Moore, yr. editor** and his wife **Louise** did two Solar System presentations and one observing for the 4-H kids at Camp Fortson on July 12<sup>th</sup> and 19<sup>th</sup>.

**Steve Knight** was the star of the show at our July meeting, showing us his multi-modified 14-in. reflector and telling us about new **GSV** goings-on. Other attendees included: new members **Art & Maria Zorka; Carlos Flores & grandson Daniel Millsaps; Erik Erikson; Brit & Tom Danei; Tom Moore; Steven “Smitty” Smith; Dwight Harness; Jessie Dasher; Felix Luciano; Dr. Richard Schmude; Charles Turner;** and **yr. president**, who presented Art with his Globular Cluster Club certificate and pin. Beyond merely being Art’s 11<sup>th</sup> A. L. observing club pin, earning the GCC pin served a deeper purpose for Art, i.e., it qualified him to become a Master Observer. (We’ll have more to say about that in a future issue of the *Observer*.)

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**This ‘n That.** One of the intriguing things about observing is that occasionally you see things you aren’t expecting to see. We’re not referring to things like **Larry Higgins** wearing a skin-tight muscle shirt, **Tom Danei** showing up for an observing before dark or **Betty Bentley** wearing day-glo flip-flops with her hair in curlers, either, but to things that, whether mysterious, unexplained, humorous or simply unforgettable, stay in your memory long after the event. Things like the aurora borealis, the green flash, a high-altitude weather balloon, a total eclipse or a bright comet like **Hale-Bopp** or **Hyakutake**.

We’re preparing an article for a future *Observer* on the subject, and yr. editor would like to hear from you regarding your own experiences. So what’s the neatest, most bizarre or unforgettable experience(s) you’ve ever had while observing?

**\*The Tolling of the Bell.** The poet **John Donne** wrote, “Any man’s death diminishes me, because I am involved in mankind. Therefore, ask not for whom the bell tolls; it tolls for thee.” That melancholy bell tolled three times in FRAC in June, and we are the poorer for it. Our deepest sympathies are extended to:

**\*Larry Higgins**, whose cousin, **Dan Byous**, passed away on June 17<sup>th</sup> while recuperating from heart surgery. Dan is survived by, among others, his brother, **Stephen Byous**, an ex-FRAC member who now lives in Washington, D. C.;

**\*Dwight Harness** and his family in the passing of Dwight’s father on Sat., June 25<sup>th</sup>; and

**\*Linda Higgins**, whose half-sister, **Angie Williams**, passed away on June 30<sup>th</sup>.

Larry, Linda and Dwight would like to extend their heartfelt appreciation for the many messages of condolence and sympathy they received during their periods of bereavement.

\*On a happier note, there is this from **Steve Knight, Ga. Sky View** Coordinator: “Wow, what a two weeks it’s been! I had to hop through hoops and practically beg the folks at Indian Springs State Park to let us have the dates we wanted for **GSV ’12** at Camp McIntosh: **Thurs., Mar. 22-Sun., Mar. 25.**

When I first mentioned those dates to the ISSP asst. manager, she said that, unless we wanted two days in the middle of the week, we were out of luck. She explained that the group renting the camp before us will be leaving on Thurs. (our first day), and since ISSP usually takes another day to clean up we could come in on Sat. if we wanted to. I assured her that, if she’d let us come in on Thurs., we’ll clean up the place (which is what we do anyway). She agreed to that arrangement, so we have the dates we wanted. But it *wasn’t* easy.

“I’ll write up something for the website, and maybe even create a Facebook page to go along with the [frac@yahoo.com](mailto:frac@yahoo.com) site.”

\*As everyone knows, **Larry Higgins** is a very funny guy with a terrific sense of humor. But he’s also blessed with an uncommon level of common sense, which makes him extremely valuable to a club whose president sometimes is as scatter-brained as a scarecrow. Here’s an example:

Without consulting Larry, **yr. president** recently announced that August would be a good time for us to try out “Kurtz Rock,” a 3-acre granite outcropping near Alvaton that’s on property owned by FRAC member **Bill Kurtz**, as a club observing site.

Don't get us wrong: trying out Kurtz Rock is a *very* good idea, and one that we'll follow up on later. But as Larry pointed out, by definition Kurtz Rock is a *rock*, and rocks and other hard surfaces collect, retain and disperse vast amounts of daytime heat during the summertime.

We've all seen heat rising from the pavement of distant highways on hot days, creating mirages and dancing, out-of-focus images as the heat rises from the road in waves. Well, that's the problem we'll face at Kurtz Rock during the summer months, only the shimmery, dancing images will be in our eyepieces as stored heat continues to rise from the granite surface after sundown in the summertime.

We need an alternative observing site to Cox Field, and Kurtz Rock is the best site we've found. It's very dark, with no light or sky glow (except in the north toward Atlanta, of course). We may or may not be able to use it during the summer months in the future. For now, though, our club's maiden voyage to Kurtz Rock will be postponed until sometime in the fall when we can properly evaluate the site under more favorable (i.e., *cooler*) observing conditions.

\*Have you heard the latest 2012 end-of-the-world rumor going around about **Betelgeuse**?

In late June, a columnist for *The Australian News* wrote that Betelgeuse has already gone supernova, despite there being no evidence that it has done so or will do so in the immediate future. (You don't need evidence if all you're doing is trying to scare people.)

Naturally, fear mongers on the web quickly embellished the story, adding that: (a) the supernova will be as big and bright in our sky as the **Sun**, giving the Earth two Suns like Tattooine in "Star Wars" for a few months; and (b) the gamma-ray burst expelled from the supernova will fry us like Krispy Kritters when it reaches Earth on or before Dec. 21, 2012.

So here's the truth about Betelgeuse, courtesy of **Dr. Phil Plait**, author of *Bad Astronomy*:

"Betelgeuse is a red supergiant star in *Orion* with about 20 times the mass of the Sun, and it's very near the end of its life. When stars this massive die, they explode as supernovae...

"The distance to Betelgeuse is...a bit more than 600 light-years, way way (sic) too far away to hurt

us...A supernova would have to be within 25 light-years or so before it would start to do measurable damage to Earth, and it would have to be much closer before that harm rose to the level of actual danger...

"(Betelgeuse going) supernova would be pretty bright, but hardly bright enough to be a second Sun...It wouldn't even be as bright as the full **Moon**, but certainly far brighter than **Venus**. Enough to cast a shadow, which would actually be pretty cool.

"Betelgeuse may explode tomorrow night, or it may not go kerblooie until the year 100,000 A.D. We don't know. But given that huge range, the odds of it blowing up next year are pretty slim. And clearly, the article was trying to tie in the 2012 date to this, *even when it has nothing to do with anything.*"

\*Just after 1 p.m. EDT on June 27<sup>th</sup>, a schoolbus-sized asteroid designated **2011 MD** missed hitting the Earth by 7,500 miles. It passed over the southern Atlantic Ocean near the coast of Antarctica before hopscotching away from our planet into a new orbit. At 33 ft. long, the space rock would not have survived a direct plunge through Earth's atmosphere.

A Near-Earth Object (NEO) of that size approaches the Earth roughly every six years.

Earlier this year, on Feb. 4<sup>th</sup>, a much smaller asteroid, **2011 CQ1**, came even closer than 2011 MD, missing the Earth by just 3,400 miles. It was just 4 ft. in diameter and, like 2011 MD, it posed no threat to our planet. But here's the cool part:

*If you want to see photos of them passing the Earth, Google "2011 MD (photos)" or "2011 CQ1 (photos)" and search the links. Can you believe that photos clearly show an object 4 ft. in dia. taken from a distance of 3,400 miles?*

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**Upcoming Meetings/Activities.** We've slowed down our club activities during the Dog Days of August. We'll have our UGa-Griffin public lunar observing on **Fri., Aug. 5<sup>th</sup>** (7-10 p.m.), and our Cox Field observings on **Fri.-Sat., Aug. 26<sup>th</sup>-27<sup>th</sup>**. Maybe the sky will cooperate for a change.

Between those dates, on **Fri., Aug. 12<sup>th</sup>** – *not* Thurs., as is usually the case – we'll have a combination pool party/meal at **Bill Warren's** house.

It will take the place of our usual club meeting in August.

Pool playtime will be from 5:00-6:45, and we'll eat at 7 p.m. We have plenty of floats and pool toys, so bring the whole family and a food item for the dinner, and we'll have a ball, y'all! (FRAC will supply the cokes, ice, etc.)

To get to Bill's house from, say, Hampton, come S on U.S. Hwy. 19/41 like you're going to Cox Field, but stay on the 4-lane Bypass past the Williamson Rd. exit. Turn left at the stoplight at Airport Rd., and then turn right at the 4-way stop at Everee Inn Rd. Go one block, and Bill's house is the red brick one on the left at the corner. (There's a little "1212 Everee Inn Rd." sign on the lawn in front.) Turn left at that corner onto Roberts St., and then park in the wide paved driveway, on the street or in the parking area of the empty house across the street.

If you live in Griffin, go out Hill St. past the airport and turn right at the stoplight at Airport Rd. Go past the walking track and gas station, and turn left at the 4-way stop at Everee Inn Rd. From there, the directions are the same as previously described.

Incidentally, in case you need an added incentive to attend our pool party/meal on the 12<sup>th</sup>, here it is:

For years, various club members have bemoaned the fact that we don't have FRAC bumper stickers. Well, **Smitty** – bless his heart! – has done something about it. He had a friend of his print up some *very* attractive FRAC bumper stickers, and he brought 30 of them to the July meeting. So the first 30 individuals/family units to arrive at our Aug. shindig will get a *free* bumper sticker, courtesy of Smitty and FRAC. (Everyone will also receive a free 2011 **Moon** phase calendar, courtesy of **Charles Turner**.)

\* \* \*

**The Night Sky in August.** **Saturn** (mag. 0.9) will be low in the WSW sky after sunset. On the opposite side of the sky, **Jupiter** (mag. -2.5) will rise a couple of hours after the sky gets as dark as it's going to get.

As for deep-sky observing, August is the ideal time to revisit old favorites such as:

\***M57 (Ring Nebula** in *Lyra*);

\* the lovely **YELLOW/blue double star Albireo (Beta Cygni)** forming the base of the Northern Cross;

\***M11, the Wild Duck Cluster** in *Scutum*, yr. **editor's** favorite open cluster;

\*the **Milky Way**, our home galaxy, its cloudlike contours flowing from below *Scorpius* in the S to beyond *Cassiopeia* in the N; and

\*the cornucopia of gorgeous globular clusters of summer (including an astonishing *fourteen* Messier globulars in *Sagittarius* and *Ophiuchus* alone).

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### **Prof. Stargazer Confronts a Critic**

*(Editor's Note: In last month's Observer, **Prof. Stargazer** referred to critics who have questioned his expertise in astronomy. What follows is a brief exchange between the professor and one of his critics [who refused to give his name, but his face was familiar.]*

**Bill Warren:** Let me ask you a simple question, Professor. Can you explain **Heisenberg's Uncertainty Principle**?

**Prof. Stargazer:** I'm not sure.

*(Note: In case you missed it, that was supposed to be a joke. So read it over, and if you still need it explained to you, just send \$5 to the professor's favorite charity: himself. –Ed.)*

**Warren:** It's just as I thought, you pompous, overblown faker: you're a fraud! My pet hamster knows more about astronomy than you do!

(Silence.)

**Warren:** What's the matter? Cat got your tongue, you old fool?

**Prof. Stargazer:** I prefer to keep silent and be thought a fool than to speak up, as you have done, and erase all doubt.

**Warren:** Why, you loud-mouthed windbag, I've forgotten more astronomy than you'll ever know!

**Prof. Stargazer:** Maybe so, but that's the problem: you've forgotten it.

**Warren, shouting:** **I'm twice the astronomer that you are!**

**Prof. Stargazer:** That's true. And if you keep eating those second and third helpings of dessert at mealtime, you'll soon be three times the astronomer that I am!

\* \* \*

## My Favorite Astronomy Books, Part I:

### Steven "Saratoga Smitty" Smith

*(Editor's Note: By any standard you want to name, Stephen "Saratoga Smitty" Smith is one of FRAC's most treasured resources.*

*A charter member of FRAC, Smitty is an extremely likeable, soft-spoken gentleman who possesses an understanding of astronomy that most of us can only dream of. His six A. L. observing club pins attest to his skills at the telescope, and his facility with the tech side of astronomy is unexcelled in FRAC or elsewhere.*

*Beyond those things, however, Smitty's broad knowledge of things astronomical derives from his being a voracious reader. He has a huge collection of astronomy books and resources.*

*It was natural, therefore, that Smitty would be asked to participate in a proposed series of articles in the Observer regarding our members' personal favorites among the astronomy books and other print resources they have read or used over the years.*

*The list is Smitty's, and his comments are enclosed in quotation marks. Supplemental information or comments by yr. editor appear in parentheses.)*

**\*Sky Atlas 2000.0., 2<sup>nd</sup> ed., by Wil Tirion** (Cambridge, Mass.: Sky Publishing, 1998). "While I enjoy using *Sky & Telescope's Pocket Star Atlas* and my other star charts and books, *Sky Atlas 2000* is my Number One pick. Its large (18-3/8" x 13-1/2") format enables me to relate to and navigate small sections of the night sky easier than other star atlases. It does, however, take up a large portion of my observing table."

**\*Norton's Star Atlas and Reference Handbook, 20<sup>th</sup> ed.** (Ian Ridpath, ed., Upper Saddle River, N. J.: Pearson Education, 2003). "Not only an atlas, *Norton's* also provides background information about all aspects of astronomy. It has been updated and expanded many times since it first appeared in 1910."

(The original author, for whom the book was named, was a British schoolmaster, **Arthur Philip Norton.**)

**\*Seeing In the Dark: How Amateur Astronomers Are Discovering the Wonders of the Universe,** by **Timothy Ferris** (New York: Simon & Schuster, 2002). "I found it an entertaining read about various amateur and semi-professional astronomers, some of whom I and other FRAC members have met." (A few years ago when Smitty was reading *Seeing In the Dark* for the first time, he sent me so many quotes from the book to use as fillers in the *Observer* that I had to put out a Special Edition of "Smitty's Snippets" to include them all. -Ed.)

**\*The Perfect Machine: Building the Palomar Telescope,** by **Ronald Florence** (New York: Harper Perennial, 1995). "This book tells about how the 200-in. Hale Telescope on Mt. Palomar came to be, and about the men who designed and built it." (At the opening ceremonies in 1949, the construction of the Hale telescope was heralded as one of the greatest technological achievements in mankind's recorded history. It was not an exaggeration.)

**\*Stargazer: The Life and Times of the Telescope,** by **Fred Watson** (New York: Da Capo Press, 2006). "This history of telescopes offers much information about the various telescope designs (e.g., refractors, reflectors, catadioptrics, etc.) and why their designers developed them as they did."

**\*Burnham's Celestial Handbook, Vols. 1-3,** by **Robert Burnham, Jr.** (New York: Dover Publications, 1978); and **The Night Sky Observer's Guide, Vols. 1-2,** by **George Kepple & Glen W. Sanner.** (Richmond, Va.: Willmann-Bell, 1998). "While the older *Burnham's* has some outdated information and theories about some deep-sky objects, it and the *NSOG* are both handy at the telescope or for planning an observing session. Both of them are fun just to read through, too, because you'll run across objects and say to yourself, 'Hey, I want to see that!'"

(An example of Burnham's readability: "[The late humorist] **Will Cuppy** has suggested that perhaps *Ursa Major* received its name at some very distant time when bears resembled dippers more than they do today." [Vol. 3, p. 1938]).

\* \* \*

**Errata. Prof. Stargazer** was wrong in his July interview. (*Gasp!*) Although the diameter of **Betelgeuse (Alpha Orionis)** is difficult to pinpoint with any accuracy because its outer region is so diffuse, it's probably somewhere between 600-700 million mi. in diameter, not 800 as stated by the esteemed professor.

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**Above.** From the front page of spaceweather.com for June 24, 2011: "SUNSPOT VS. WILDFIRE. On June 21<sup>st</sup>, while working a raging wildfire in north Fla., medivac pilot **Chris Lambert** looked up at the **Sun** and saw a dark spot through the smoke. 'Was it a transit of **Mercury**?' He e-mailed the question to his friend, solar photographer **Stephen Ramsden**. 'I knew exactly what he was looking at,' says Ramsden, 'because I had been imaging it all week...' It was sunspot AR1236.

"I explained to Chris that he was simply using the ancient Chinese method of watching the Sun through thick smoke or at sunrise and sunset in order to record these giant islands of magnetism on the Sun's surface,' continues Ramsden. 'I sent him back a closeup photo that I had taken earlier that morning of

the same feature.'" (The sunspot is north of center in Stephen's incredible photo.)



**Above. M101, Pinwheel Galaxy in Ursa Major.** **Alan Pryor** writes, "I did some rework on M101 to brighten things up. I thought that this version might show up better in the newsletter.

"Whenever I do an astrophoto, I always think it looks pretty good. Then, after printing it a couple of days later, I see how dark it is and I start thinking about how I can improve it.

"BTW, the work you do on the newsletter is fantastic. With all the material you cover, it has to be a major project to get it out every month."

*(Thanks, Alan. Actually, your methods and mine are very similar. The hardest part is getting it down on paper – or, in your case, preparing it for printing; after that, it's just a matter of seeing how it can be improved, and then making changes until we're satisfied that it's the best we can do. –Ed.)*

M101 is one of the finest face-on spiral galaxies in the sky. **Charles Messier** added it to his famous list in 1781. It was, in fact, the last object on his list, since **M102** was a mistake, a last-minute addition to the 3<sup>rd</sup> and final edition of his book that turned out to be a repeat of M101. (Eight other objects were added from Messier's unpublished notes by various astronomers long after his death.)

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## New GOES-R to Give More Tornado Warning Time

by Dauna Coulter and Dr. Tony Phillips

So far this spring, more than 1,400 tornadoes have struck the U.S. Some of them have cut jaw-dropping trails of destruction across the countryside and, tragically, across inhabited communities, too. Hundreds of lives have been lost in the onslaught.

Throughout the season, the National Weather Service has routinely issued tornado alerts. In the case of the Alabama tornadoes of April 27<sup>th</sup>, forecasters warned of severe weather five full days before the twisters struck. Because they couldn't say precisely *where* the twisters would strike, however, many of their warnings went unheeded.

"If people get a hurricane warning, they often evacuate the area," notes NOAA's Steve Goodman. "But we react differently to tornado warnings."

Perhaps it's because tornadoes are smaller than hurricanes, and the odds of a direct hit seem so remote. Recent pictures from Tuscaloosa, Alabama, and Joplin, Missouri, however, show the perils of playing those odds. Goodman believes that more precise warnings could save lives.

To fine-tune tornado warnings, NOAA will soon launch the first in a series of next-generation weather satellites – GOES-R (Geostationary Operational Environmental Satellites-R series). The spacecraft is brimming with advanced sensors for measuring key ingredients of severe weather including winds, cloud growth, and lightning.

"GOES-R will be the first geostationary spacecraft to carry a lightning sensor," says Goodman, the GOES-R

Program Senior Scientist. "Studies show that sudden changes in the total lightning activity correlate with storm intensity—and with tornadoes."

The lightning mapper will detect and map not only cloud-to-ground lightning, but also bolts within and between clouds. The kind of cloud-to-ground lightning we see from our front yards accounts for only 15-20 percent of total lightning. To get a clear idea of a storm's intensity, meteorologists need to know about *all* the lightning—a view GOES-R can provide.

All by itself, the lightning mapper will provide 7 minutes more lead time in tornado warnings, according to Goodman. GOES-R's state-of-the-art instruments will also improve long-range forecasts.

"The satellite's Advanced Baseline Imager (ABI), for instance, will provide a much clearer picture of clouds," says NOAA research meteorologist Tim Schmit. Compared to lesser instruments already in orbit, ABI can better detect super-cold "overshooting tops," evidence of enormous energy and upward velocity that correlate with subsequent severe weather.

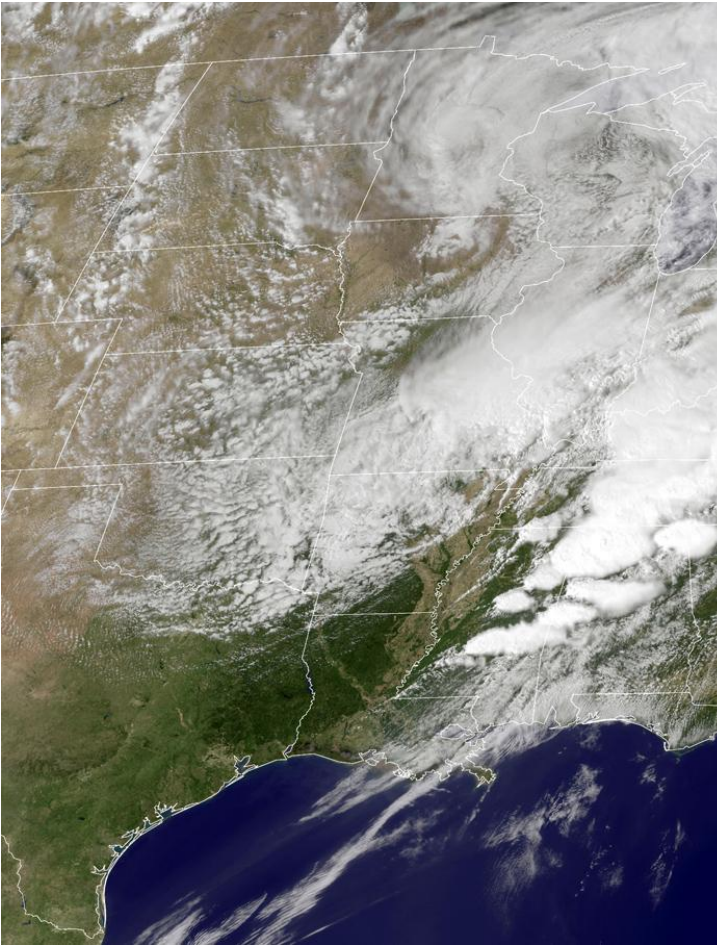
"Accurate advanced notice of high-risk tornadic conditions can cue officials to close schools and businesses even before tornadoes are actually detected," says Schmit.

Forecasters doubt tornadoes can ever be predicted with 100% accuracy. The twisters are just too capricious. GOES-R, however, is a step in the right direction.

Find out more about GOES-R's unprecedented capabilities at <http://www.goes-r.gov>. Young people can learn more about tornadoes and all kinds of other weather at <http://scijinks.gov>.

*This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under*

*a contract with the National Aeronautics and Space Administration.*



Caption:

*This GOES image shows the storms that spurred the intense April 27 tornado outbreak in the southern U.S. Animation showing the development of weather can be seen at*

*<http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=50347>.*