

---

# AGILE: a Satellite among the Students

(an American Public School Pioneer Project)

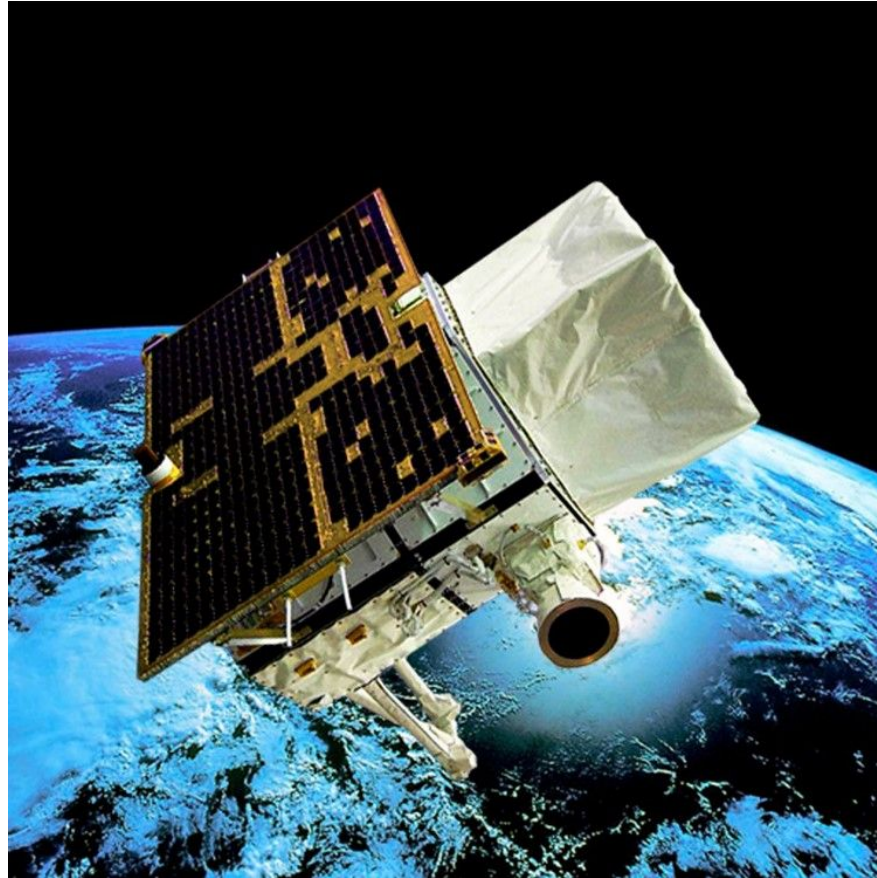
**Franco Paoletti**

*East Windsor Regional School District  
Hightstown, NJ (USA)*



---

# A Monumental Project of Technology and Science for a better Understanding of our Universe



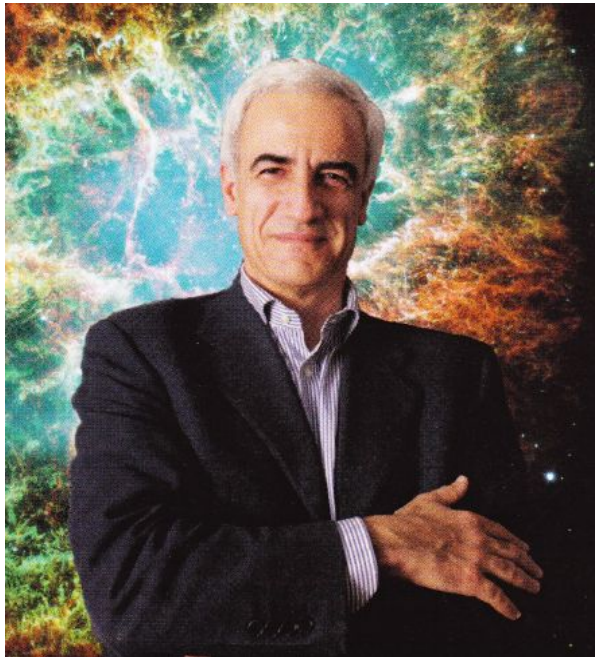
Click on the link below to view AGILE's movie - *courtesy of the Italian Space Agency (ASI)* :  
<https://youtu.be/8BaCsi3wFMs>

AGILE: a Satellite among the Students - Dr. P.

# AGILE's Successes and temporary Set-backs

## AGILE's facts

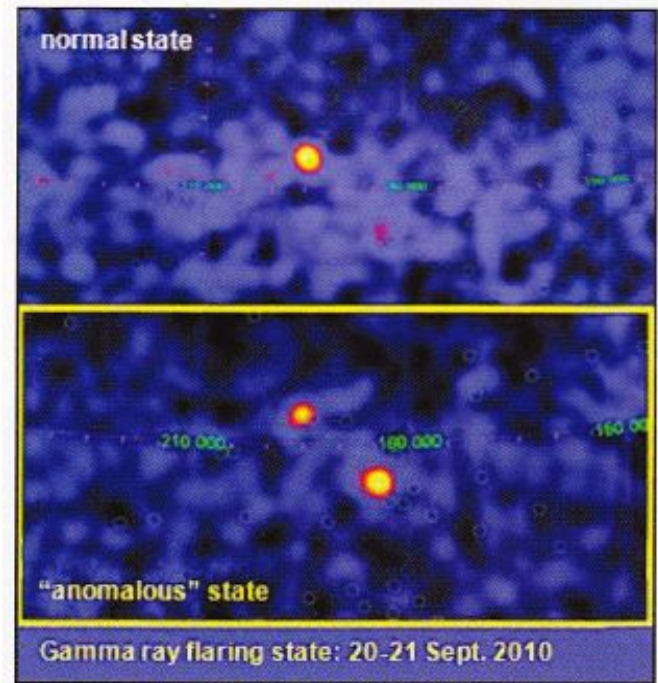
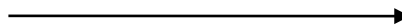
- Anomalous gamma-ray emission discovery from Crab nebula: *Sept. 20, 2010*
- Awarded Bruno Rossi prize in Astrophysics
- Operation put on hold for apparent lack of funds on: *Jan. 01, 2014*



Prof. Marco Tavani  
AGILE Mission P.I.



AGILE Gamma-ray  
emission data from the  
Crab nebula



Credits: Science, **341**, 710 (2013)

AGILE: a Satellite among the Students - Dr. P.

# The International Petition in support of AGILE



WORKSHOP AGILE 8-9 APRIL 2014

Concluding remarks – Barbara Negri

*... continued*

Recently, as a tangible confirmation of this success, an international petition supporting the protraction of the AGILE Mission was started at Princeton University by the world leading scientists Paoletti and Coppi, and promptly signed by the Nobel Prize winner Hulse. As of today the petition reached almost 500 signatures from all over the world.

*Click on the following link to view  
AGILE's International Petition site:*  
[https://docs.google.com/forms/d/e/1FAIpQLScXvHSITfv00SoTBnWUVnPvFWODc\\_GPZkWwkM3Z0X7FiRcZAg/viewform](https://docs.google.com/forms/d/e/1FAIpQLScXvHSITfv00SoTBnWUVnPvFWODc_GPZkWwkM3Z0X7FiRcZAg/viewform)



AGILE: a Satellite among the Students – Dr. P.



# The Petition Letter and the Most Important Signature

Russell A. Hulse  
1993 Nobel Laureate - Physics

Princeton, November 21, 2013



Picture credits: dmagazine.com

Dr. Enrico Saggese, President  
Italian Space Agency  
Via del Politecnico snc  
00133 Rome (Italy)

Re.: **Petition – “AGILE Must Go On”** –

Dear President Saggese:

On behalf of all the individuals that signed this petition, I would like to express my deepest concern for the recent turn of events that left the AGILE satellite mission in possible jeopardy.

It seems that, due to lack of funding, there is the possibility that the AGILE mission will be either cancelled or placed in a sort of dormant state while a decision is made on its fate. I regretfully inform you that either of these solutions is unacceptable not only to us but to the international scientific community as a whole as well as, without exaggeration, the broader general public.

The fact is that, after delivering the stunning discovery of the anomalous, not fully characterized nor understood, gamma-ray flare activity in the Crab nebula, the AGILE satellite has, in a sense, self-upgraded its mission to such a high level of importance that its future continuous active presence in the sky is now a “must”, not a “possibility”. AGILE is substantially improving our knowledge of the gamma-ray sky, also giving a crucial contribution to the study of the terrestrial gamma-ray flashes detected in the Earth atmosphere.

Through the AGILE mission, Italy was able to substantially advance its scientific and technical capabilities while also advancing its stature in terms of having an instrumental role in contributing to the world scientific community. For these reasons, we all believe the Italian Government has, now, a genuine obligation both to scientists and non-scientists to fully support the AGILE mission up to, and even beyond, its originally planned completion. We therefore urge you to make full use of the power of our words symbolized by the signing of this petition to leverage the Italian Government and to assure that there will be no cancellation, suspension or interruption (however temporary) of the AGILE mission: “**AGILE must go on**”.

Respectfully,

Franco Paoletti, PhD  
Princeton, NJ (USA)  
[petition4agile@gmail.com](mailto:petition4agile@gmail.com)

  
A blue arrow points from the signature of Russell A. Hulse to the signature of Franco Paoletti.

AGILE: a Satellite among the Students – Dr. P.

# The International Petition Wins! AGILE Goes On!



*Dr. Franco Paoletti presents Mission P.I. Prof. Marco Tavani with the poster symbolizing the AGILE petition*

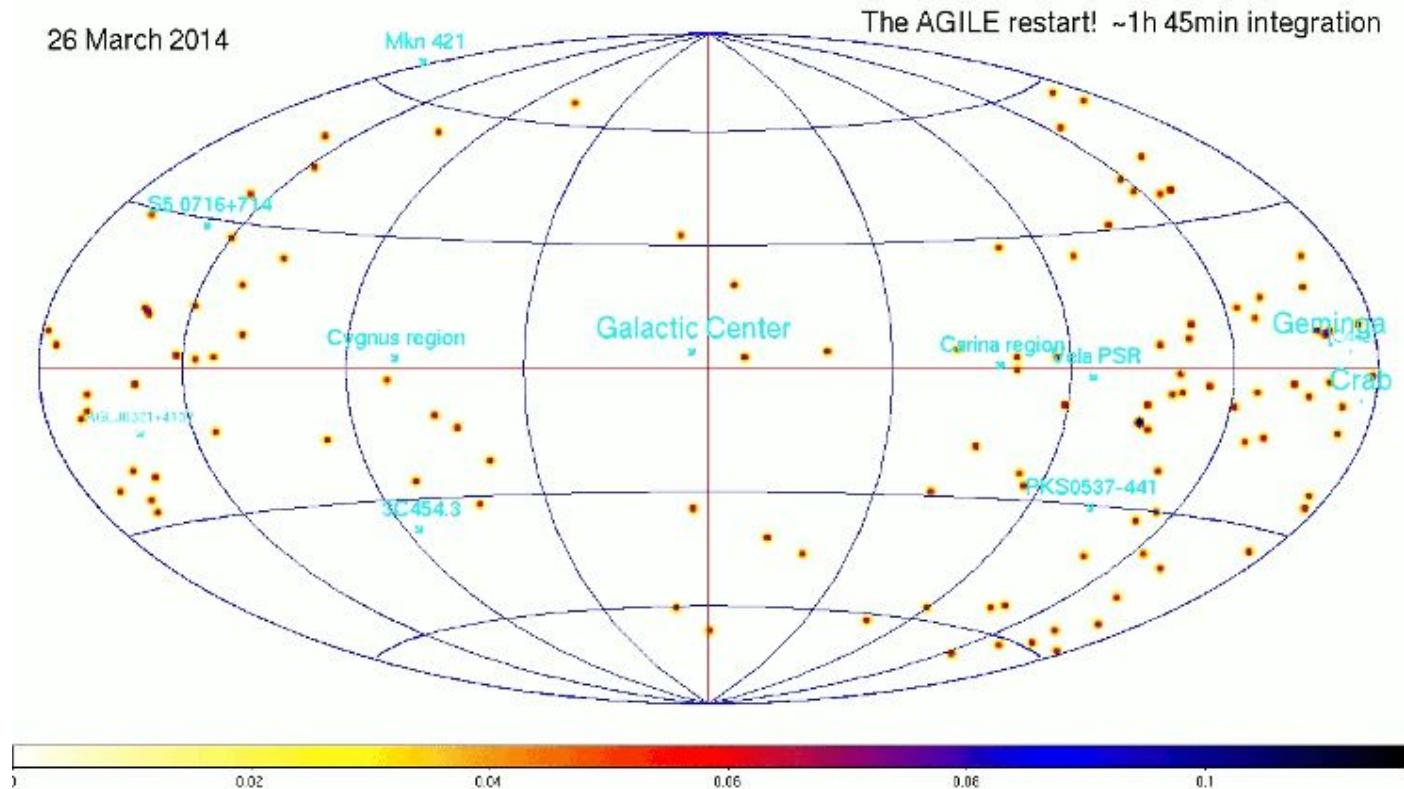
AGILE: a Satellite among the Students – Dr. P.



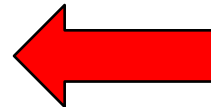


# AGILE opens, again, its Gamma-ray Eyes onto the Universe

*March 26, 2014 – 24 hour period integrated signal after restart*



Click on the link below to view AGILE open its eyes again - *courtesy of ASDC & AGILE Team*:  
<http://agile.asdc.asi.it/topresults.html#304>



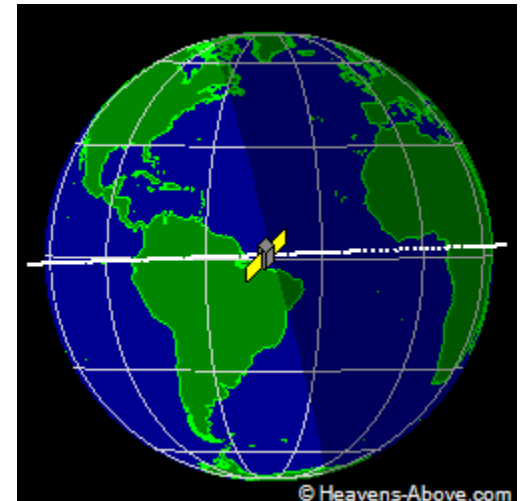
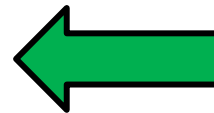
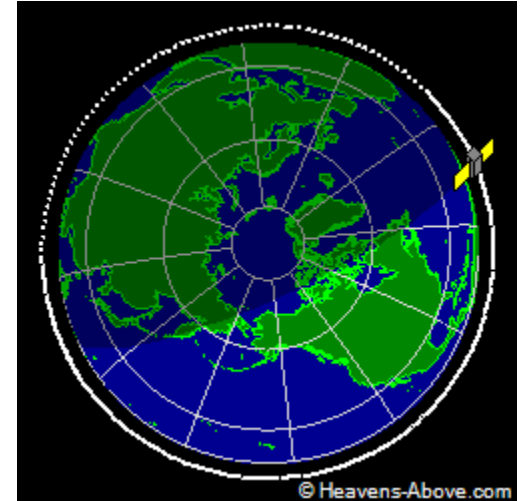
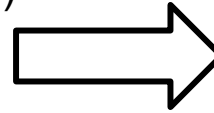
AGILE: a Satellite among the Students – Dr. P.



# Making Real-Science with AGILE “You” do it!

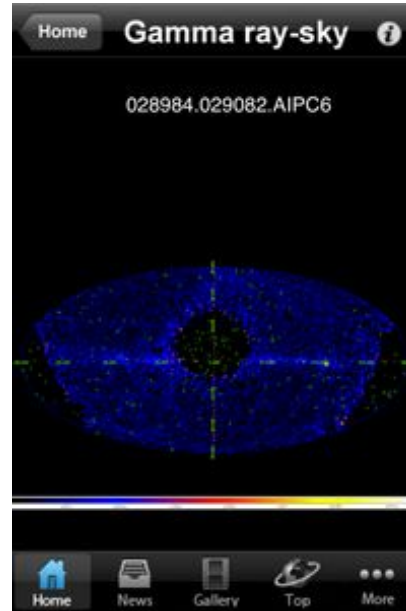
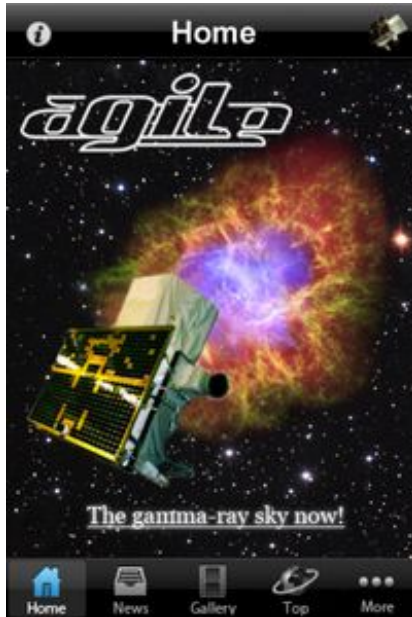
## What to do:

- Install the “AGILE Science App” on your smartphone (see next for details)
- Identify a measurable variable connected to AGILE’s orbit and test it using the “AGILE Science App”
- Compare your measurement with theoretical predictions obtained applying the laws of physics you know



*Click on the link below to access AGILE’s orbit site:  
<http://www.heavens-above.com/orbit.aspx?satid=31135>*

# The AGILE Science App



[Hyperlink to app site](#) Apple

[Hyperlink to app site](#) Android

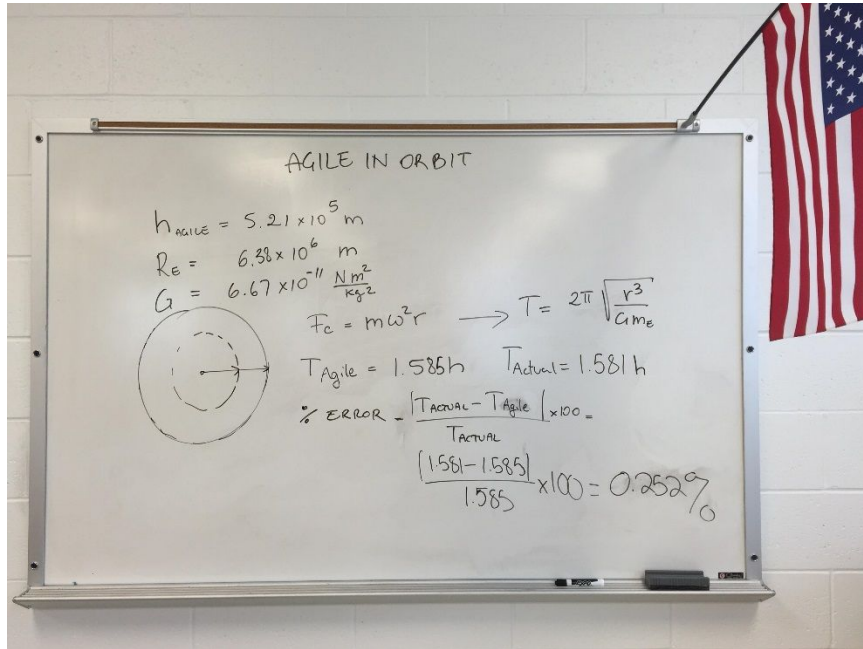
"The gamma-ray sky now!", a picture of our beautiful sky as seen by the AGILE Team during the daily scientific activities.

A quick look at our gamma-ray sky Universe.

The sky map is updated every 96 minutes in real-time!

AGILE: a Satellite among the Students - Dr. P.

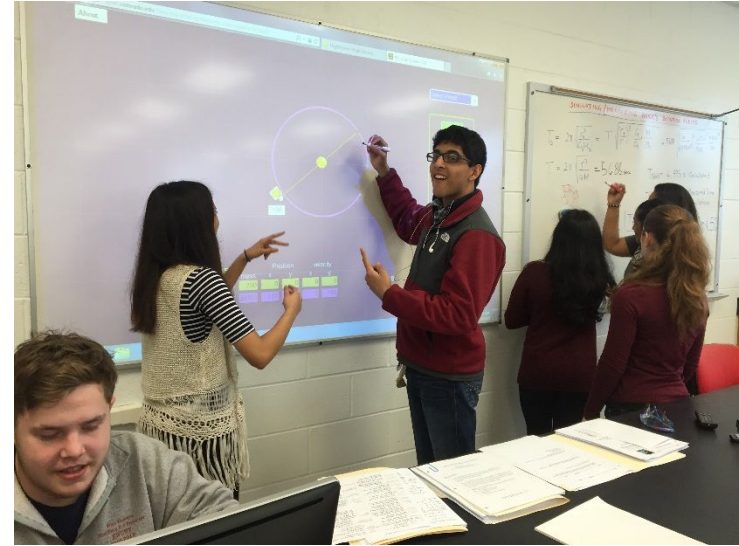
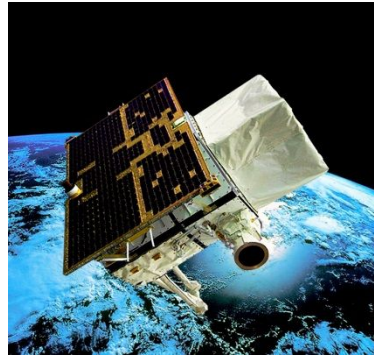
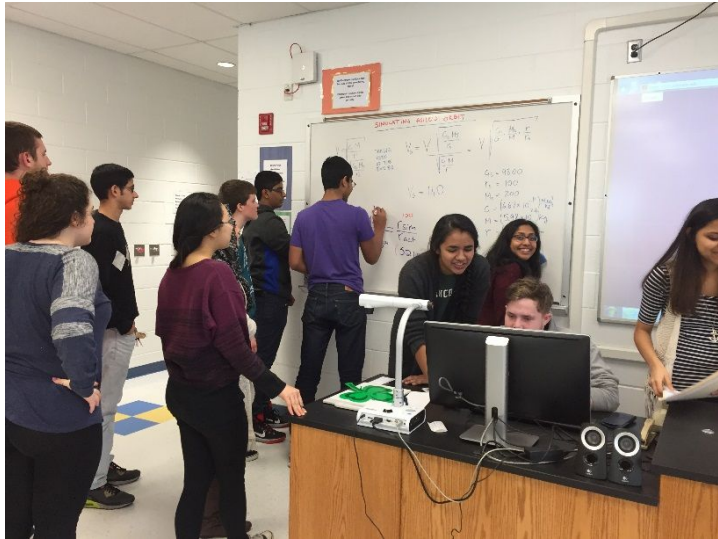
# Calculating AGILE's Orbit at Hightstown High School



*Verified orbit calculations via real-time integrated GPS  
available in AGILE Science App*

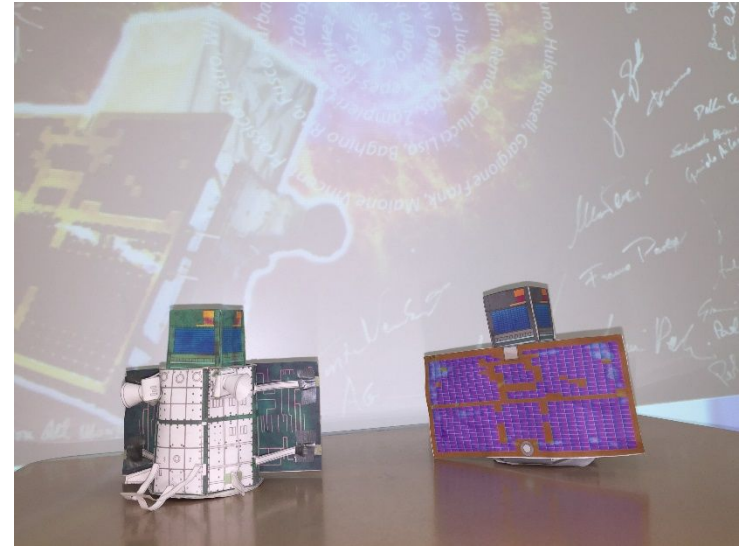
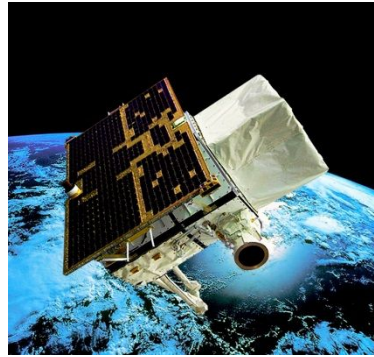
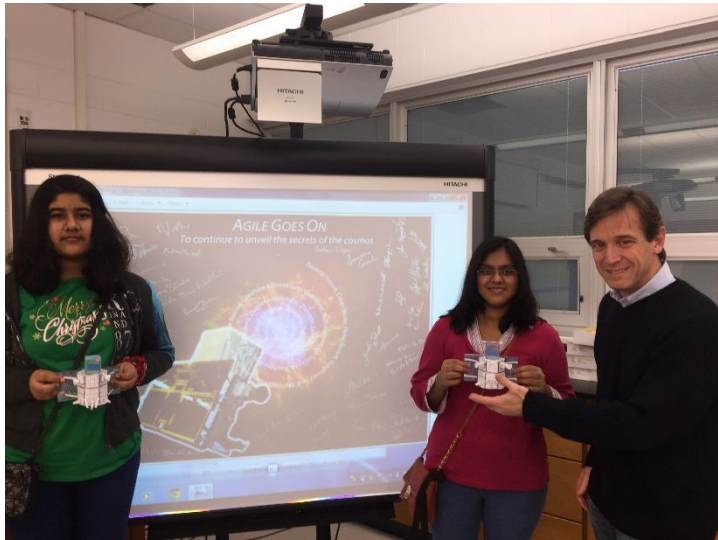
AGILE: a Satellite among the Students - Dr. P.





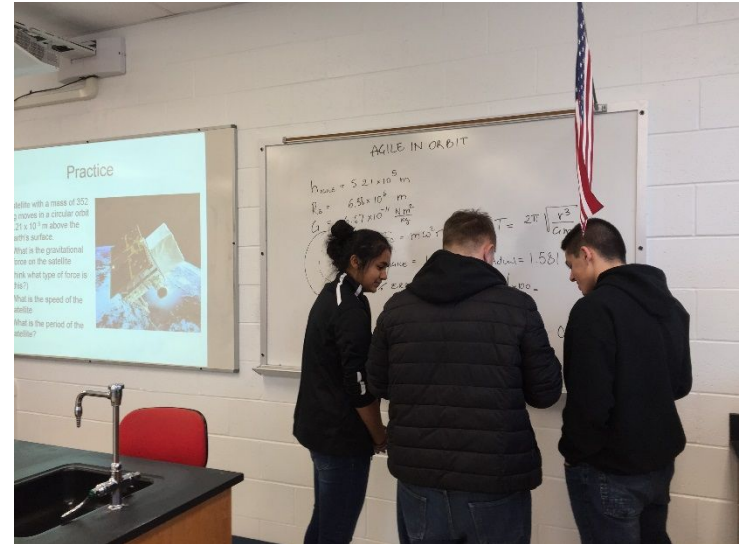
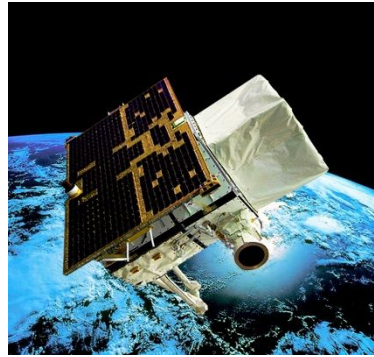
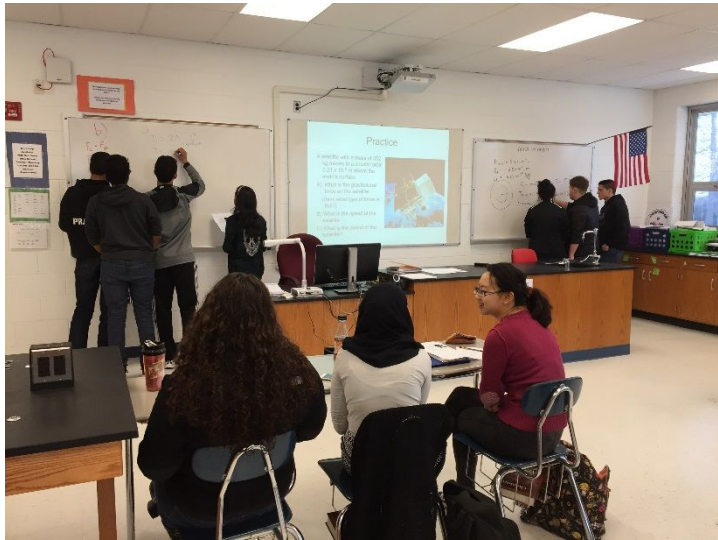
Follow us on  
**twitter** 

**@hhsagilescience**



Follow us on  
**twitter** 

**@hhsagilescience**

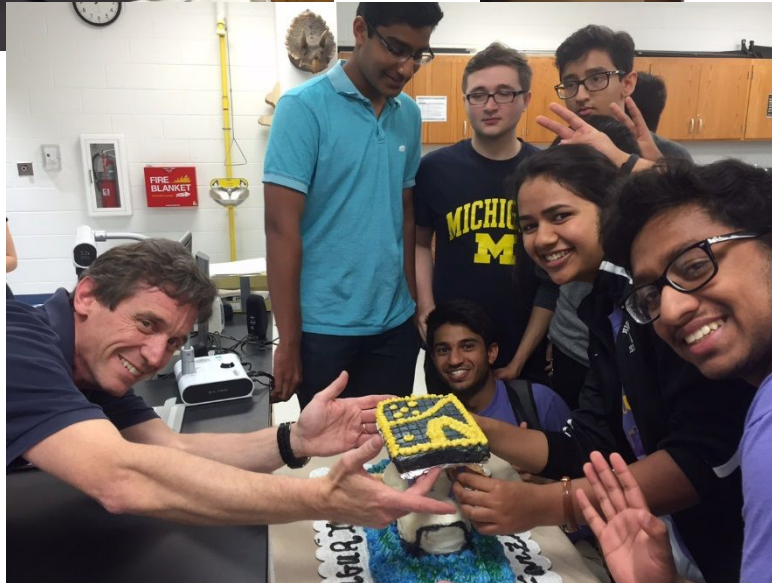
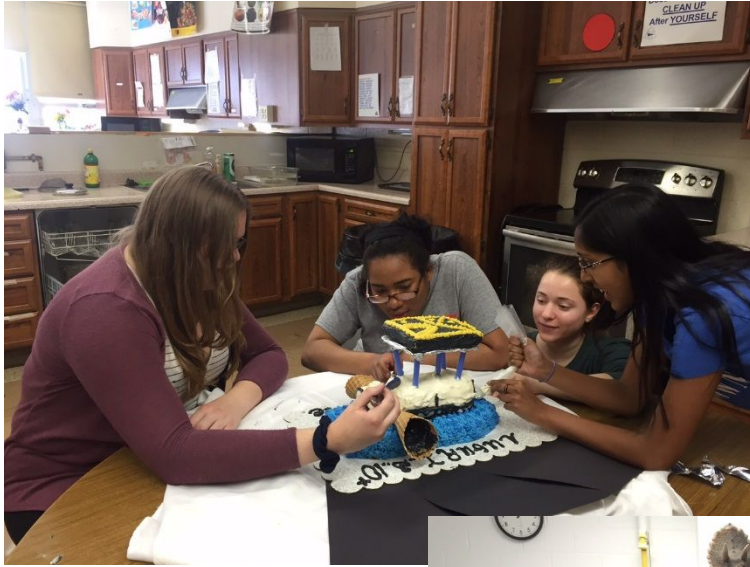


Follow us on  
**twitter** 

**@hhsagilescience**



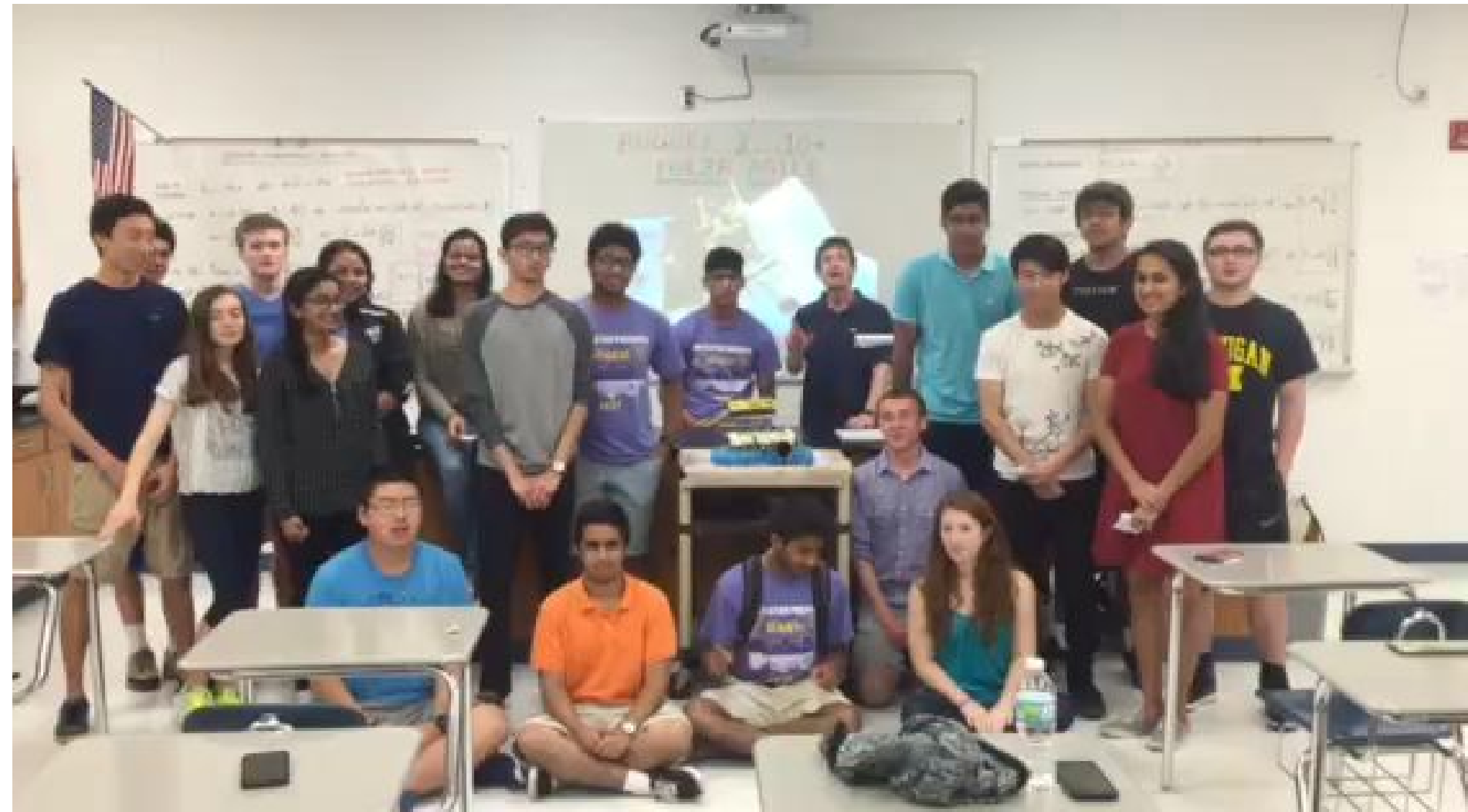
# AUGURI, AGILE ... & ... 10+



AGILE: a Satellite among the Students - Dr. P.

---

# AUGURI, AGILE ... & ... 10+



AGILE: a Satellite among the Students - Dr. P.



FORZA AGILE





HHS Students:

*Bellars, Lauren*

*Bommanaboina, Ravali*

*Cukkemane, Nikhil*

*Das, Nilanjana*

*Ely, Jonathan*

*Fatima, Alisa*

*Fisher, Douglas*

*Harrison, Samantha*

*Hezrony, Benjamin*

*Jetter, Haley*

*Kannan, Renuka*

*Kaur, Harvir*

*Kaushik, Manav*

*Koli, Vrushali*

*Lee, Christina*

*McGlew, Brian*

*Naidu, Vinod*

*Narayan, Anusha*

*Neelagiri, Pranay*

*Ngai, Nelson*

*Quinn, Ian*

*Ramachandran, Ananya*

*Rege, Purva*

*Roberts, William*

*Rosenberg, Max*

*Rosenberger, Christopher*

*Sadalgekar, Gargi*

*Sedacca, Alyssa*

*Segree, Alphanea*

*Seng, Kevin*

*Shah, Aditya*

*Shah, Siddhi*

*Shaikh, Suha*

*Sherwin, Gabriel*

*Singh, Jasman*

*Titicula, John*

*Verma, Shivam*

*Witlieb, Alexandra*

*Yu, Hao*

Acknowledgements:

*The AGILE Team*

*Italian Space Agency (ASI)*

*Italian Institute of Astrophysics (INAF)*

*Italian Institute for Nuclear Physics (INFN)*

*Consorzio Universitario per la Fisica Spaziale (CIFS)*

*ASI Space Science Data Center (SSDC/ASDC)*

*AGILE Principal Investigator: Marco Tavani (INAF/IAPS Rome)*

*AGILE Science App: Andrea Bulgarelli, et. al. (INAF/IASF Bologna)*