

AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS

# FLIER

LONG ISLAND SECTION

FEBRUARY 2021

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The **coronavirus** (COVID-19) continues to spread and new versions are mutating and spreading. Total USA deaths have now exceeded 500,000 people. Please do everything you can to stay healthy. Older adults are much more vulnerable, so, if over 80, be extra careful. 80% of US deaths are people over 60 years old.

- **Wear a mask** when near others.
  - If you're sick or feeling unwell, stay home
  - **Stay home** as much as possible
  - **Avoid crowds** and non-essential travel
  - Don't touch your face with unwashed hands
  - Maintain 6-foot safety distances
  - Cough or sneeze into a tissue or into your sleeve at the elbow
  - Clean & disinfect things you use often
  - Wash your hands often with soap and water for a minimum of 20 seconds or use hand sanitizer
  - Avoid contact with sick people
  - If you have questions or start to feel sick, call your healthcare provider
  - **Follow the guidance from the CDC.**
- Questions? Go to: [coronavirus.gov](https://www.cdc.gov/coronavirus).**

***Note from the Chairman***

We hope that you and your families are healthy and have not been severely affected by the COVID-19 pandemic.

Due to the scheduling delays and chaos resulting from the pandemic, the Long Island Section Council has decided to again accept the suggestion of its Nominating Committee to not conduct an election this year, and instead reappoint all council members to their present positions for the upcoming year. Please let us know if you have a problem with this decision. If you would like to join the Council, we could appoint you to the one vacant position.

**The coronavirus continues to affect many AIAA plans. The Long Island Section did not have Section meetings since May, but we have scheduled virtual meetings starting on February 25. Please see announcement on the next page and sign up.**

**AIAA headquarters has cancelled events and converted others to Zoom events.**

Thank you,  
**Dave Paris, 516-458-8593 [davidsparis@twc.com](mailto:davidsparis@twc.com)**

**EVENTS CALENDAR**

**Feb. 25, Zoom Section Meeting with Joe Wilding, "Is the Future Supersonic?" Details on page 2.**

**Mar. 18, Zoom Section Meeting with Todd Barber, "Voyager 1 & 2: Humanity's Most Distant Explorers." Details on page 3.**

**April 30, Deadline for Essay Contest submission. See details on page 4.**

**May 18, Zoom Section Meeting with Dr. Robert Zubrin. "Destination Mars." See next FLIER.**

**We are planning April and June Zoom Section meetings. Details to be set. We would appreciate your suggestions.**

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FEBRUARY 2021

**National Engineers Week Local Event  
AIAA/IEEE(AESS)/IISE  
Joint Zoom Section Meeting**



**Thursday, February 25, 2021**

**Mr. Joe Wilding  
Engineering Consultant**

**“Is the Future Supersonic?”**

**Location: Zoom Meeting online**

**Time: 6:30 PM Social Time  
7:00 PM Presentation**

**RESERVATIONS REQUIRED  
RSVP BY February 24, 2021  
[davidsparis@twc.com](mailto:davidsparis@twc.com)  
or (516) 458-8593**

This talk will cover: Current Developments in Civil Supersonics

**Cost: Free for Everyone**

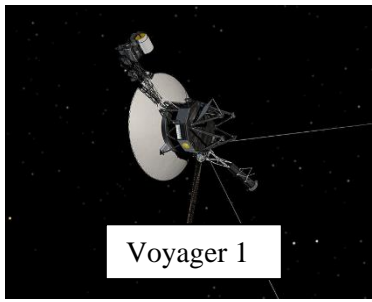
- Brief history of civil supersonics
- Recent developments and Companies
- Challenges of bringing back supersonics
  - Regulatory
  - Technical
  - Industry inertia

Joe has 25 years of aircraft development experience including business jets, military transports, small and large UAVs, light sport aircraft and sailplanes. Joe has Bachelor's and Master's degrees in Aerospace Engineering from Wichita State University. He has worked on several programs from initial concept through regulatory certification. His responsibilities have included composites structural development, aircraft loads, flutter analysis, conceptual aircraft design, flight test engineering, and program management. Joe has been a co-founder in four different startup companies, and he is currently splitting his time between engineering consulting, technical mentoring, and communications coaching for engineers.

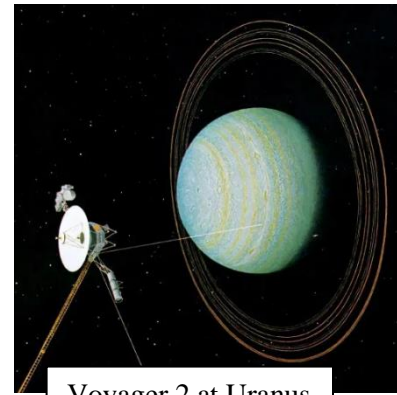
**Directions:** Click on the link in the meeting invitation you will receive after signing up for the meeting.

**FLIER**

**FEBRUARY 2021**



Voyager 1



Voyager 2 at Uranus

**Thursday, March 18, 2021**  
**Todd Barber,**  
**AIAA Distinguished Lecturer**  
**Senior Propulsion Engineer**  
**Jet Propulsion Laboratory**

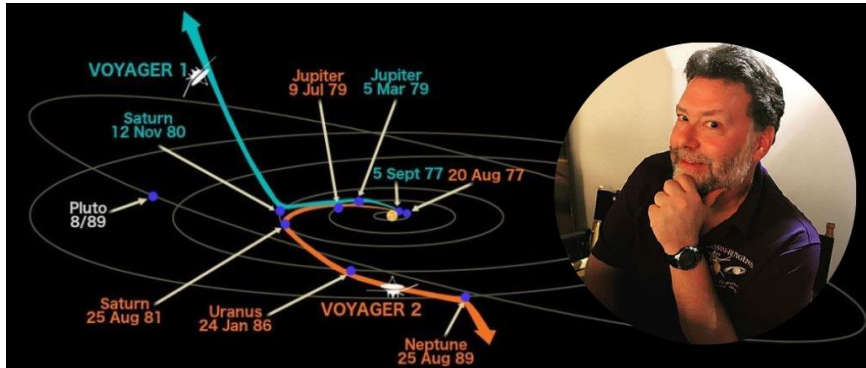
## “Voyager 1 & 2: Humanity's Most Distant Explorers”

**Location:** Zoom Meeting online  
 Link will be sent to those who register

**Time:** 6:30 PM Social Time  
 7:00 PM Presentation

**RESERVATIONS REQUIRED**  
**RSVP BY March 17, 2021**  
[davidsparis@twc.com](mailto:davidsparis@twc.com)  
 or (516) 458-8593

**Cost: Free for Everyone**



The Voyager missions to the outer planets and interstellar space will be discussed in detail. Topics to be discussed include the incredible opportunity for a "grand tour" of the outer planets encountered only every 176 years and some pictures from the first ever encounters with Jupiter, Saturn, Uranus, and Neptune. The subsequent interstellar mission and current status will also be highlighted as well, particularly the challenges of flying

two geriatric spacecraft with a tiny flight team. Finally, the future of the mission and the Voyager Golden Record will be featured in some detail.

Todd Barber is a JPL senior propulsion engineer, who worked as lead propulsion engineer on the Cassini mission to Saturn following part-time work on the Mars Exploration Rover (Spirit and Opportunity) mission, Deep Impact mission (as lead impact propulsion engineer), and the Mars Science Laboratory (MSL) mission, which landed the large rover Curiosity on the red planet in 2012. Cassini was launched in 1997 on its two-billion mile, seven-year journey to the ringed planet. Twin rovers were launched to the red planet in June and July of 2003, and Opportunity is still going strong over nine years after landing. Todd also worked as the lead impactor propulsion engineer on Deep Impact, which successfully crashed into Comet Tempel-1 in 2005, at 23,000 miles per hour.

Mr. Barber worked on the Galileo project for over seven years and his primary responsibility was getting Galileo into Jupiter orbit in 1995 for which he received NASA's Exceptional Achievement Award in 1996.

Todd also worked part-time on the Space Infra-Red Telescope Facility (SIRTF) mission and on the Stardust mission, the Mars Sample Return mission, a Mars airplane study, and the Deep Space One Mission, the first NASA mission to use electric propulsion. This mission included flybys of a near-Earth asteroid, Braille, and a comet named Borrelly. Mr. Barber is a native of Wichita, Kansas, and attended MIT between 1984 and 1990, obtaining B.S. and M.S. degrees in aerospace engineering, with a humanities concentration in music, and has been with JPL since graduating in 1990. He composes church choral music, with two pieces published to date. His hobbies include singing charitably and professionally, playing the piano, visiting all the U.S. tri-state corners and national parks, playing basketball, and amateur astronomy.

**Directions:** Click on the link in the meeting invitation you will receive after signing up for the meeting.

**FLIER**

**FEBRUARY 2021**



THE AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS (AIAA),  
& THE AIAA SPACE SYSTEMS TECHNICAL COMMITTEE (SSTC)  
& THE AIAA LONG ISLAND SECTION

INVITE YOU TO PARTICIPATE IN THE

## **2021 SSTC & LI SECTION STUDENT ESSAY CONTEST**

for students in Seventh and Eighth Grades

The Long Island Section will judge essays submitted for both 7<sup>th</sup> and 8<sup>th</sup> grades together. The best 7<sup>th</sup> and 8<sup>th</sup> grade essays will be submitted to the SSTC.

### **THEME:**

“Describe science experiments you can conduct on the lunar surface that are unique to our moon.”

### **REQUIREMENTS:**

- Typewritten essay, double-spaced, Times New Roman 12 pt. font, in 500-1,000 words
- Include student name, teacher name, grade, and school name printed at the top of the essay
- Submit essay by e-mail to the Long Island Section at [davidsparis@twc.com](mailto:davidsparis@twc.com). Include student name, **and** teacher name, phone, e-mail, and mailing address, for notification and awards in the body of the e-mail.

### **JUDGING CRITERIA**

1. Originality of ideas presented
2. Soundness of logic used to develop ideas
3. Realism of ideas presented
4. Quality of composition and clarity of expression

### **NATIONAL PRIZES:**

- 1<sup>st</sup> place will be awarded \$125.
- 2<sup>nd</sup> place will be awarded \$75.
- 3<sup>rd</sup> place will be awarded \$50.

Winners will be publicly announced in the September 2021 issue of Aerospace America magazine.

**ELIGIBILITY:** Any seventh or eighth grader (or equivalent).



### **SUBMISSIONS OR QUESTIONS FOR LI SECTION:**

E-mail Dave Paris at [davidsparis@twc.com](mailto:davidsparis@twc.com)

### **SUBMISSIONS OR QUESTIONS FOR SSTC:**

If you wish to avoid the LI contest, submit “at-large” to Jeff Puschell, at [jjpuschell@raytheon.com](mailto:jjpuschell@raytheon.com).

Send questions about the SSTC contest by Email to Anthony Shao and Erica Rodgers  
([ant.shao@gmail.com](mailto:ant.shao@gmail.com), [erica.rodgers@nasa.gov](mailto:erica.rodgers@nasa.gov))

**DEADLINE:** Final submission deadline to the Long Island AIAA section is **April 30, 2021**. Local winners and their teachers will be notified in May 2021. National winners and their teachers will be notified in June.

### **LONG ISLAND SECTION PRIZES:**

Seventh & Eighth Grade essays judged together

- 1<sup>st</sup> place: \$400 award
- 2<sup>nd</sup> place: \$200 award
- 3<sup>rd</sup> place: \$100 award

If the Long Island Section is able to hold an Annual Dinner Meeting, all winners will be invited.



## **MESC and EJCLI ENGINEERS WEEK EVENTS HELD VIRTUALLY THIS YEAR**

This year on February 17, 2021 the Metropolitan Engineering Societies Council (MESC) and on February 18, 2021 the Engineers Joint Committee of Long Island (EJCLI) held their National Engineers Week events virtually for the first time. The MESC had 116 attendees including presenters and each webinar that I attended had of the EJCLI series had approximately 20 attendees per webinar and three panelists. There were 80 responders, but the total number of attendees was not available at press time.

The MESC event featured Brigadier General Thomas J. Tickner, commanding general and Division Engineer of the North Atlantic Division of the US Army Corps of Engineers (USACE). He spoke about the Corps mission in various areas including the Northeast/Mid Atlantic US, parts of Europe and Africa and is in charge of a \$5B program to plan, design and construct facilities to support the US military and protect America's water resources, mitigate risk from disasters, and restore and enhance the environment. Specifically he spoke about harbor dredging, the raising of the Bayonne Bridge and the USACEs efforts during the pandemic to build out the care facilities used during the current pandemic and dredge part of the harbor for the hospital ship, USNS Comfort during the height of the pandemic. Also featured was the NYC Mayor Bill Di Blasio's message for Engineers Week which celebrates the work of engineers in our daily lives.

The EJCLI event featured various webinars on zoom for which one may earn Professional Development Hours (PDHs) which may be used to renew a Professional Engineering License as required by NY State law. I attended several webinars which included the following for which I will give a short synopsis:

- A talk on Geospatial tools and Surveying where the presenter outlined all of the terminologies, various types of surveys and current technologies needed for performing surveys given the current state of knowledge of GPS, GIS, CAD and REVIT software.
- A talk on Deep Energy Retrofit in order to have existing buildings comply with NYC law 97 mandating zero carbon emissions by 2050. The presenter mentioned emerging technologies such as Façade Integrated Mechanical Systems where there would be a central heat pump device on the roofs of buildings for heating and cooling through pipes between the outer wall and inside of a new façade of a building and using electrical heating as opposed to fossil fuel heating. In response to questions on the economic viability of such proposals, he stated that it would cost approximately \$4 million to fit out an existing 140 apartment building which would amount to \$40000 per apartment per square foot. Not an inexpensive undertaking and begs lots of questions in my mind not yet answered or asked.
- A talk on Air Filtration Systems for Virus and Bacteria Neutralization was given where the presenter compared current filter systems such as HEPA, MERV and UV C with a CCN 99 electrostatic filter system that his company is developing using a copper screen, is recyclable and presents no medical waste issues as the viruses and bacteria would be killed. He is developing what appeared to be a home portable version which was displayed during the talk. We wait to see more developments of this promising technology.
- Also there were talks on mechanical equipment vibration monitoring which compared different type of monitoring systems in terms of costs and pros and cons (hard wired, wireless and rack mounted) as well as a talk on Lithium ion battery manufacturing processes and manufacturing. All of these webinars were quite interesting to understand the range of technologies used in these areas as per the presenter's talks.

This was the first attempt by both groups to present National Engineers Week events virtually and as I attended both programs, I must state that they were a resounding success in terms of material learned, attendance figures and the ability to rise to a challenge by both groups during the current pandemic.

By Gregory E Homatas PE, Vice Chair AIAA Long Island Section

## COVID-19 Current Information

**The United States still has far more cases and deaths than any other country.**

**New York State's cases and deaths no longer exceed all other states.**

**The first case of the COVID-19 variant from South Africa has been confirmed in a Nassau County resident. Current vaccines used in the USA are of significantly reduced effectiveness against this variant.**

### **Latest numbers at:**

**<https://ncov2019.live/>**

	<b><u>March FLIER</u></b>	<b><u>May FLIER</u></b>	<b><u>Feb. 2021 FLIER</u></b>
Total number of world cases:	561,965	5,560,461	111,952,175
Total number of world deaths:	26,725	346,557	2,477,781

### **Status in the USA**

	<b><u>March 27</u></b>	<b><u>May 25</u></b>	<b><u>Feb. 21, 2021</u></b>
Total number of cases:	96,968	1,689,179	28,765,423
Total number of deaths:	1480	98,334	511,133
NYS cases:	44,635	359,926	1,627,523
NYS deaths:	519	23,282	47,020

In the USA, almost 19,000,000 people have “recovered” from COVID-19.

About 9% of US residents have been infected.