



INSIDE THIS ISSUE:

AAKF winter outreach	2
Kansas Central LEGO League winners	2
Interstellar Symposium call for abstracts	3
Peterson Planetarium special events	3
Letter by Kansas U.S. Senator Jerry Moran	3
WSI Space Exploration Lecture #2	3
Hague to go into wild blue yonder again	3

LEGOS INTO ORBIT!

LEGO robots, feverish competition, deafening noise, and excited young scientists—all were found at the inaugural Kansas Central FIRST LEGO League competition held December 8.

On that day, 16 teams of Kansas 4th to 8th graders gathered at Haysville Middle School for a competition based on LEGO Mindstorms robots. The theme: INTO ORBIT.

In the past Kansas has had spotty access to FIRST LEGO League programs, but the founding of

Kansas Youth Science and Technology (KYST) Foundation in 2017 brought a league to underserved parts of the state.

Kansas now has three official FIRST LEGO League regions. The Kansas Southwest Region is headquartered at the Mid-America Air Museum in Liberal. It runs down a vertical line from the edges of Smith to Barber Counties west to Colorado.

The northeast 14 counties are part of the Kansas City region. The Kansas Central region, an

L-shaped area between those two, covers the rest of the state and includes teams through the Southeast Kansas Education Service Center at Greenbush. The League is part of the FIRST organization founded by Dean Kamen, (Segway inventor 30 years ago), a progression of STEM-Based robotic competition programs which are offered from ages 6-18.

The three pillars of the competition are a robotics challenge, a project challenge and a core values challenge. Awards are

Cont. "LEGO" page 2



Photos courtesy of Amy Lash Esau.

An Andale Middle School student sets her robot in the bases during competition.



The Eagle Bots (from Smoky Valley Home Educators Co-op in Salina) cheer on their robots.

Salina native pilots successful SpaceShipTwo test launch

Salina native Mark Stucky was lead test pilot on the Dec. 13 successful launch of a Virgin Galactic SpaceShipTwo plane from the Mojave Desert in California. This puts the Virgin Galactic spaceflight company one step closer to its goal of commercial space tourism.

According to press reports, the plane reached an altitude of 51.4 miles (82.7 km) and a Mach 2.9 speed (almost 3x the speed of sound.) High enough that NASA sent microgravity experiments along.

According to his NASA biography, Stucky's flight experiences began hang gliding off the Flint Hills at age 15. He graduated from Salina South in 1976. At K-State, he earned a Blue Key Scholarship for an extra curricular design project involving hang gliding, graduating in 1980 with



Mark Stucky Photo Credit: NASA

Cont. "TEST" page 2



The Robo Troop is a STEM and robotics-focused specialty Girl Scout troop in Sedgwick County.

Cont. “LEGO” from page 1 given in all areas.

For the robotic challenge, each team has the exact same elements to work with to design, make and test their robots.

There are 15 tasks the robots try to accomplish during the 2.5 minute matches on a space-themed tabletop playing field. Tasks relate to missions like solar panel angling, crater crossing, payload moving, ore extraction, lander touch-down, space

station module and satellite orbits missions.

In the project portion, each team identifies a problem faced during long space missions and proposes a solution in a 5 minute presentation. Topics tackled included depression, radiation issues, food sources. Students do research and talk with experts in the field to come up with their ideas.

The seven-member Blockheads Team from southeast Kansas tackled an eyesight problem. Weightlessness allows fluid pressure build-up on the back of the eyes to flatten the eyeball, causing damage to sight and to the eye itself. Their idea would be to make contact lenses that release a drug or medicine into the eyes to reduce the fluid and pressure.

The core values portion, is, in a way, the jewel of the program.

“This is a multi-faceted program. The robotics draw the kids in because it’s fun, but the project and core values portions are where they learn other things,” says Amy Lash Esau, KYST Foundation President.

“The robotics teaches about physics and engineering, but the project portion teaches about

**Kansas Central
FIRST LEGO League**

2018 Competition results

“INTO ORBIT”

**CHAMPIONS AWARD—
Antigravity Guys—
Yates Center**

**ROBOT DESIGN AWARD—
RoboMasters —
Sedgwick / Sumner Counties**

**PROJECT AWARD—
Applebots Team—Manhattan**

**CORE VALUES AWARD—
Blockheads Team—
Independence**

**JUDGES AWARD—
SVHE Eagle Bots—Salina**



The Applebots from Manhattan were awarded a project award and trophy (see inset) for their project about growing sweet potatoes aeroponically in space.

discovery, innovation, impact, inclusion, scientific method and teamwork,” she says.

“[And] there are great synergies, With the progression of programs [in the FIRST platform], the older kids help the younger ones. For example, the high school Horse Power Team from Salina has helped two LEGO teams,” says Lash Esau.

A new season for the Kansas Central League begins in August. Registration begins in May. For more, go to info@kscentralfll.org

For information about the Southwest Kansas Region, contact the Mid-America Air Museum by e-mailing peggy.mcculley@cityoffliberal.org Their new season starts March 23 with the theme of “Into Orbit”.

The KCFirst LEGO League regional championship will be January 26 at Metropolitan Community College Business and Technology Campus, KCMO. The event is free and open to the public. For more info, go to www.kcfirst.org/events.

**Ad Astra
Kansas winter
outreach—**

— **2019 Kansas Day Event** at the Kansas Historical Society Museum in Topeka on Tuesday, January 29. This annual event to honor Kansas’ birthday is geared for students and is free.

— **Society of Women Engineers (SWE) Engineering Expo** at Century II in Wichita on Saturday, March 30. The STEM focused event is free and fun for all ages.

“TEST” cont. from page 1

a B.S. degree in Physical Science.

Before joining Virgin Galactic in 2015, his aviation career included test piloting for the Marine Corps, NASA Johnson Space Center and Dryden (now Armstrong) Flight Research Center and Scaled Composites. Before joining NASA, flights had included such diverse aircraft as the SR-71 Blackbird and the Goodyear Blimp.

An in-depth article on Stucky published last August by New Yorker Magazine, “Virgin Galactic’s Rocketman”, is available online.



Hague to go into the wild blue yonder again

Kansas astronaut Nick Hague, whose October space flight to the International Space Station was aborted in mid-flight due to a rocket malfunction is now scheduled to launch on February 28, 2019, from Baikonur Cosmodrome in Kazakhstan. He will be a member of Expedition 59.

Find out more [here](#)

Also, NASA has put out Posters of all Expeditions to the ISS, including the aborted Mission 57. Posters for expeditions 58 and 59 will be coming out shortly. Find them at [expeditions](#)



Photo Credit: NASA

Nick Hague

SIXTH INTERSTELLAR SYMPOSIUM AND INTERSTELLAR PROPULSION WORKSHOP
 NOVEMBER 10-15, 2019
 WICHITA, KS

CALL FOR ABSTRACTS NOW AT
TINY.CO/SPACE2019

CALL FOR ABSTRACTS

This event includes a special two-and-a-half day NASA Propulsion Workshop focusing on Beamed Energy Propulsion and Highly Energetic Nuclear Processes for Propulsion (Fusion and Antimatter). This is a new addition to the regular symposia, a workshop focusing on a specific aspect of interstellar exploration. As part of the overall symposium it will not require special registration.

Published through the Ad Astra Initiative of Space Age Publishing Company
 230 California Avenue #108
 Palo Alto, CA 94306

Editor/Publisher: Steve Durst
news@spaceagepub.com
 Managing Ed: Jeanette Steinert
jeanettesteinert@att.net
 Webmaster: Ken Moum
 Topeka Liaison: Jodi Spindler

Board of Directors
 President: Jeanette Steinert
 Vice-President: Ken Moum
 Treasurer: Vicki Johnson
 Steve Durst
 Craig McLaughlin
 Kay Neill
 Nick Solomey

WICHITA SPACE INITIATIVE

Space Exploration Lecture Series #2

“Spaceworks and NASA’s 50th Anniversary of Apollo 11”

Jim Remar, Cosmosphere CEO, will speak on the Cosmosphere’s ongoing restoration work for NASA in prep for the 50th Anniversary of Apollo 11 this year.

Thursday, January 31, 3:30 p.m. — WSU campus, 100 Lindquist Hall
 Free and open to the public.

Ensuring Kansas students have the opportunity to be future astronauts

WICHITA—In a column written by U.S. Kansas Senator Jerry Moran and published in the Wichita Eagle on Dec. 23, 2018, he expresses commitment to helping American youth inherit opportunities for space exploration.

Moran, chairman of the Senate Appropriations Subcommittee which has jurisdiction over NASA, states that providing support for NASA has been a priority, especially when it comes to promoting

STEM education for youth.

A Senate bipartisan appropriations bill for the upcoming fiscal year prioritizes education programs within NASA. A part of the NASA budget is the Office of STEM Engagement, which seeks to provide superior learning tools to youth and teachers to increase K-12 involvement in STEM.

To read the full article, click [HERE](#)

PETERSON PLANETARIUM
 circa 1959
 Spring Schedule 2019

Thursday - NASA NIGHTS! - 6:30-7:45 pm
 January 17, 24, 31
 February 7, 14, 21, 28
 March 7, 21, 28
 April 4, 11, 18, 25
 May 2, 9

Saturdays - Night-Sky Tour + Full Dome Show
 11:30 am-12:30 pm
 January 19 (*Magic Tree House Space Mission*)
 February 2 (*Earthquakes*), 16 (*Super Volcanoes*)
 March 2 (*A Planet for Goldilocks*), 30 (*Cosmic Colors*)
 April 13 (*IBEX*), 27 (*Origins of Life*)

SPECIAL SPEAKERS & EVENTS!
 *1/20 - Lunar Eclipse at 11 - 12 pm
 *2/16 - Solar Physics by Caleb Gimar/5H 3/1 6:30
 *3/20 - Spring Equinox in Peterson Planetarium
 *4?? - TBA
 *5/5 - Astronaut Day in Peterson Planetarium

emporia.edu/planetarium
 620-341-5636
scimath@emporia.edu
[PetersonPlanetariumESU/](https://www.facebook.com/PetersonPlanetariumESU/)

Cram Science Hall 31
 EMPORIA STATE UNIVERSITY

NOTE: Peterson Planetarium’s regular series—NASA nights and the Night-Sky Tour+ Full Dome Show are open to the general public and free. As are these Special Speaker Events. Makes for fun and educational family outings.



Reach out to us at:
contact@adastra-ks.org

INTERSTELLAR R & D

Will return in the Spring 2019 issue