

THE PLATTSMOUTH AMATEUR RADIO CLUB

Communicator

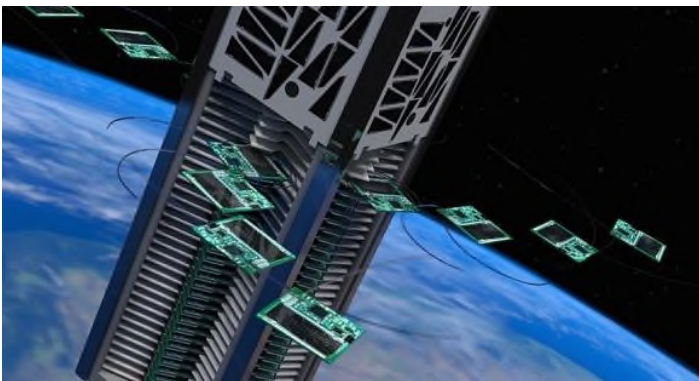
March 2019

KickSat-2 is Alive and Being Tracked

(ARRL 02/19/2019) For the first couple of days after the 3U KickSat-2 was deployed from Cygnus NG-10 last November, nothing was heard from the satellite. But in a February 16 post to AMSAT-BB, Nico Janssen, PA0DLO, reported receiving several short and weak transmissions from KickSat 2 — short telemetry bursts on 437.5077 MHz. Assistant Professor of Aeronautics and Astronautics at Stanford University Zac Manchester, KD2BHC, is the principal investigator for the KickSat project, which NASA adopted as an official mission.

“Yes, KickSat-2 is alive,” Manchester told ARRL. “We have been tracking it since Thursday, [February 14,] and have been able to decode at least some packets. The signal is weak and we think the antenna did not properly deploy on the CubeSat.”

KickSat-2 is scheduled to deploy up to 104 tiny Sprite satellites into low Earth orbit. The Sprites then would transmit on 437.240 MHz at 10 mW, communicating with each other via a mesh network and with command stations on Earth. The Sprites, which are less than 2 square inches, are expected to reenter Earth’s atmosphere within weeks. Manchester did not indicate if attempts would be made to deploy the Sprites.



NASA calls KickSat-2 a technology demonstration mission that’s designed to demonstrate the deployment and operation of prototype Sprite “ChipSats,” also known as “femtosatellites.”

The FCC recently imposed a \$900,000 penalty on a commercial concern, Swarm Technologies, for launching similar tiny satellites after the FCC had denied permission.

“These spacecraft are therefore below the size threshold at which detection by the Space Surveillance Network can be con-

sidered routine,” the FCC told Swarm Technologies.

Manchester had been trying without success to convince the FCC to allow him to deploy the Sprites from KickSat-2, but, apparently gun shy after the Swarm action, the agency denied permission at the last moment.

Once NASA adopted KickSat-2 as its own mission, however, the regulatory body shifted to the National Telecommunications and Information Administration (NTIA), and the launch went forward.

In the Swarm Technologies proceeding, the FCC has argued that satellites smaller than 10 centimeters on any side were too small, although the agency has been accused of inconsistency in its approach to licensing small satellites. KickSat-2’s Sprites are 3.5 centimeters on the side and just 0.2 centimeters thick. Manchester’s 2014 KickSat was unable to deploy its Sprites before deorbiting.

The FCC issued an Enforcement Advisory last April to remind satellite operators that they must obtain FCC authorization for space station and Earth station operations. The advisory cautioned satellite operators and launch companies against proceeding with launch arrangements following a license denial or prior to receiving an FCC authorization.

Manchester is reported to be developing a plan to deploy a group of small satellites to survey the sky in the LF radio range, something that cannot be done from the ground owing to the ionosphere.

<http://www.arrl.org/news/kicksat-2-is-alive-and-being-tracked>

ARRL Board Gives the Go-Ahead to Lifelong Learning Initiative

(ARRL02/07/2019) ARRL is undertaking a new initiative to provide online educational opportunities to a broad range of radio amateurs. The Lifelong Learning Initiative will seek to provide a series of learning tracks that will serve the needs of the various interest groups within the Amateur Radio community.

While designed for everyone with an interest in learning more about Amateur Radio, the Lifelong Learning Initiative will initially focus on creating online learning opportunities for new and newer hams, a segment of the Amateur Radio community desperately searching for educational and instructional resources.

The ARRL Board of Directors set the Lifelong Learning
(Continued on Page 3)

2019 PAID MEMBERSHIP

- Paid memberships in **Bold**
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 AIØN..... Chuck Engberg* [E]
KØEGG John 'Tim' Eggertsen [G]
K3CRFDave Smith [E]
 K5LBSJerry Gault [E]
KA0IJY Keith Keene [E]
KBØFSIPat McCollum [T]
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KBØZZT..... George Bellairs [T]
KCØDTK..... Joan Bellairs [T]
KCØHYD.....John Titsworth [G]
KCØHYE.....Shirley Titsworth [T]
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KEØBXB Kim Allen [T]
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 KGØKRBeth Engberg* [E]
KIØPYKevin Faris [E]
 N5SEZ..... Ray McNally [E]
 NØLZH.....John Harrington [T]
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 WØZYD..... Debbie McLaughlin [G]
W3DCQ.....Bill Pulsifer [G]

**Charter Members #New Ham*

Note: Thanks to all who have paid their dues and many who have given additional donations. All donations are greatly appreciated. Please let me know of any corrections.

Meetings are 8am the last Saturday of most months at Mom's Café in Plattsmouth.

Tuesday night get-togethers at Plattsmouth Burger King at 7 PM



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443.45⁺ is located in downtown Omaha
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The January 27, 2019 meeting was held at the Annual Dinner at Famous Dave's in Bellevue. The meeting was called to order at 6:34 pm by President Roger Behrns

Those in attendance were Roger (KBØOGO) and Linda, Kevin (KIØPY) and Sandy, Ray (N5SEZ), Derek (WØDBW) and Lisa, Stanley and Lexie, John(KCØHYD) and Shirley(KCØHYE), Keith (KA0IJY), Dudley (KDØNMD), Kim (KEØBXB), Dave (K3CRF) and Lou, Jim(KA0KCV), Barb (KCØHLB), Bill (KEØXQ) and Pat (KBØFSI), George(KBØZZT) and Joan(KCØDTK) and Bill (W3DCQ).

The Minutes of the November meeting were approved on a motion by John and second by Shirley.

The treasurer reported dues and donations of \$175 and no expenses which leaves \$295 in the repeater fund and \$870.35 in the general fund for a balance of \$1165.35.

No business needed to be transacted. The president thanked everyone for attending and noted that advance ballots for the officer election were available to all dues-paid members.

The meeting adjourned on a motion by John and second by George at 6:36.

PLATTSMOUTH ARC MEMBERSHIP REGISTRATION FORM					
Name		Call Sign		Class	
Address		City		State	Zip
E-Mail			Phone #		
Spouse Name			Call Sign		Class
Membership Type <input type="checkbox"/> Primary(\$15) <input type="checkbox"/> Spouse (\$5) <input type="checkbox"/> Student (\$5) <input type="checkbox"/> New Ham	● Additional donations are gratefully accepted. ● New Hams are free during the year they receive their first license. ● Please give this form and dues to the club treasurer or any club officer.		Donation for: <input type="checkbox"/> Repeater fund <input type="checkbox"/> Insurance <input type="checkbox"/> Other _____ <input type="checkbox"/> General		Amount: <input type="checkbox"/> I prefer my donation to be anonymous.
Any additional e-mail or cell phone #s?					

Meeting Calendar
at Mom's Café
8am, Sat February 23, 2019
8am, Sat March 30, 2019
8am, Sat April 27, 2019
at Mom's Café

Initiative in motion, endorsing and funding the program and approving the hiring of advertising agency Mintz + Hoke to work with ARRL Lifelong Learning Manager Kris Bickell, K1BIC, and other ARRL staffers in building this learning environment. Mintz + Hoke will conduct the research necessary to identify the different educational needs within the broader Amateur Radio community.

“Mintz + Hoke is a really strong partner in this project,” Bickell said, adding that the firm has developed a really deep understanding of the Amateur Radio community as part of the investigation phase of this endeavor.

Bickell noted that youth education will be a critical component of this Learning Initiative, but he also believes that overall opportunities in this area are huge, as many individuals are looking to expand their knowledge of Amateur Radio.

He said that, where appropriate, the content of these learning tracks within the initiative will build upon much of the knowledge base that already exists within ARRL, such as the material in QST and QEX magazines, as well as other ARRL publications and manuals. Some new content will be created as well, to ensure that the information being provided stays fresh and dynamic.

In addition to providing instruction, the Learning Initiative will offer resources that allow individuals to delve further into a subject, rather than just relying on ARRL content.

“We are building a new learning environment,” Bickell said. “It will take a lot of work to put this all together, but we believe that this initiative will firmly establish ARRL as an educational leader in Amateur Radio.” He expects the online Lifelong Learning platform to launch in the fall of 2019.

<http://www.arrl.org/news/arrl-board-gives-the-go-ahead-to-lifelong-learning-initiative>

Earth’s Magnetic North Pole Shifts toward Siberia

(ARRL 02/05/2019) National Centers for Environmental Information (NCEI) scientists have updated the world magnetic model (WMM) mid-cycle, as Earth’s northern magnetic pole has begun shifting quickly away from the Canadian Arctic and toward Siberia, an NCEI report said this week. The new WMM more accurately represents the change of the magnetic field since 2015. The alteration could have an impact on government, industry, and consumer electronics.

“Due to unplanned variations in the Arctic region, scientists have released a new model to more accurately represent the change of the magnetic field,” the report said, noting that updated versions of the WMM are typically released every 5 years. This update comes about 1 year early.

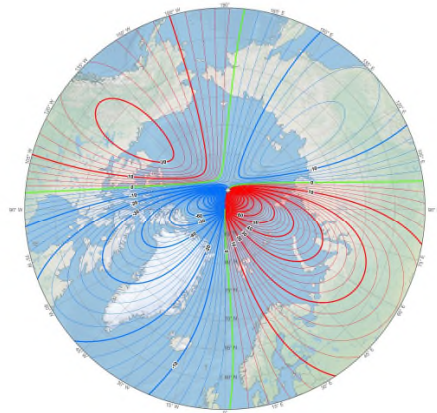
“This out-of-cycle update before next year’s official release of WMM 2020 will ensure safe navigation for military applications, commercial airlines, search and rescue operations, and others operating around the North Pole,” said NCEI, which is part of the National Oceanographic and Atmospheric Administration (NOAA). “Organizations such as NASA, the Federal Aviation Administration, US Forest Service, and many more use this technology. The military uses the WMM for undersea and aircraft navigation, parachute deployment, and more.”

Other governmental entities use the technology for survey-

ing and mapping, satellite/antenna tracking, and air traffic management. Smartphone and consumer electronics companies also rely on the WMM to provide consumers with accurate compass apps, maps, and GPS services.

Airport runways may be the most visible example of a navigation aid updated to match shifts in Earth’s magnetic field. Airports around the country use the data to give runways numerical names, which pilots refer to on the ground. The declination has changed slightly more than 2.5° over the past 2 decades or so. Compasses use declination — the difference between true north and where a compass points — to help correct navigation systems for a wide variety of uses.

As Earth’s magnetic field evolves between the 5-year re-



lease schedule of the WMM, these predicted values can become off as the rate of change in Earth’s magnetic field evolves due to unpredictable flows in Earth’s core. The NCEI report said Earth’s north polar region is experiencing one of these erratic changes.

DXer and Contester Frank Donovan, W3LPL, said the slowly drifting geomagnetic north pole has much greater significance to DXers and contesters because the northern auroral oval — which greatly affects HF propagation over the north Atlantic and north Pacific Oceans — is closely centered on the geomagnetic north pole and not on the magnetic — or dip — north pole discussed in the NCEI report.

“The geomagnetic north pole has been drifting generally northward at only about 3 miles per year,” Donovan pointed out. “The location of the magnetic north pole is important to navigation but of relatively little importance to space-based phenomena such as HF ionospheric propagation.” — Thanks to NOAA-NCEI

<http://www.arrl.org/news/earth-s-magnetic-north-pole-shifts-toward-siberia>
<https://www.ncei.noaa.gov/news/world-magnetic-model-out-cycle-release>

Lincoln Hamfest March 9

The Nebraska State ARRL Convention and hamfest will be held on March 9, 2019 from 8 am to 3 pm. Admission is \$8 with kids under 16 free. Grand Prize Drawings at 2:30 will be a \$300 and two \$200 gift certificates to Associated Radio. There will be presentations by the Heartland Organization of Rocketry, Matt Anderson on “What’s Happening in Amateur Radio” and Joe Eisenburg on QRP HF Operating Set-Ups. And, of course, the usual flea market!

<http://www.lincolnhemfest.org>