

THE PLATTSMOUTH AMATEUR RADIO CLUB

Communicator

December-January 2018-19

Es'hail-2 Geostationary Amateur Satellite Launched

(ARRL 11/15/2018) A SpaceX Falcon 9 vehicle lifted off flawlessly at 2046 UTC on November 15 from Cape Canaveral, carrying the first Amateur Radio payload destined for geostationary orbit. About 32 minutes after launch, SpaceX reports the spacecraft was successfully deployed into a geostationary transfer orbit (GTO).

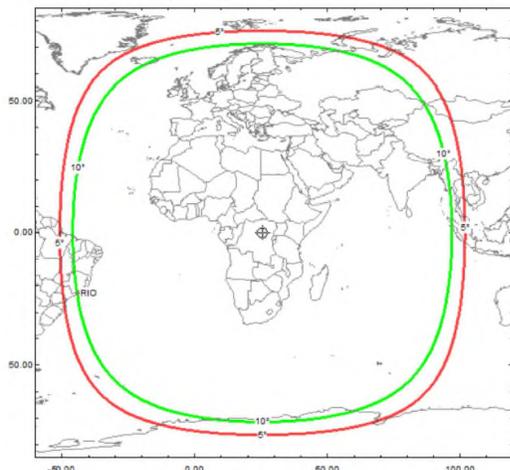
Positioned at 25.5° E, the satellite will carry an Amateur Radio S-band and X-band payload capable of linking radio amateurs from Brazil to Thailand, although it's unlikely that Es'hail-2 will be accessible from North America with typical Amateur Radio satellite gear.

The recent subject of an AMSAT-UK Colloquium presentation, Es'hail-2 carries two Phase 4 (P4-A) non-inverting Amateur Radio transponders operating in a 2.4 GHz up/10.45 GHz down configuration. This offers a 250 kHz bandwidth linear transponder intended for conventional analog operations, plus an 8 MHz bandwidth transponder for experimental digital modulation schemes and DVB amateur television.

The Qatar Amateur Radio Society and Qatar Satellite Company are cooperating on the Amateur Radio project, and AMSAT-DL is providing technical support. Es'hail-2 also carries commercial payloads. Following the launch, SpaceX landed its reusable Falcon 9 vehicle on a drone vessel in the Atlantic.

<http://www.arrl.org/news/es-hail-2-geostationary-satellite-carrying-amateur-radio-payload-launched>
<https://amsat-uk.org/2018/11/05/eshail-2-geostationary-transponders/>
<https://eshail.batc.org.uk/>

Coverage from orbital position of 26 deg East



When it comes to antennas, size matters

(NEU 8/23/2017) Good things come in small packages. This is especially true in the world of portable wireless communications systems. Most electronics have shrunk over time but a critical component of these devices—the antenna—hasn't followed suit. Researchers haven't been able to get them much smaller, until now.

In a paper published online on August 22, 2017 in Nature Communications, Nian Sun, professor of electrical and computer engineering at Northeastern, and his colleagues describe a new approach to designing antennas. The discovery enables researchers to construct antennas that are up to a thousand times smaller than currently available antennas, Sun said.

"A lot of people have tried hard to reduce the size of antennas. This has been an open challenge for the whole society," Sun said. "We looked into this problem and thought, 'why don't we use a new mechanism?'"

Traditional antennas are built to receive and transmit electromagnetic waves. But electromagnetic waves have a relatively long wavelength. That means antennas must maintain a certain size in order to work efficiently with electromagnetic radiation.

Instead of designing antennas at the electromagnetic wave resonance—so they receive and transmit electromagnetic waves—researchers tailored the antennas to acoustic resonance. Acoustic resonance waves are roughly 10 thousand times smaller than electromagnetic waves. This translates to an antenna that's one or two orders of magnitude smaller than even the most compact antennas available today.

Since acoustic resonance and electromagnetic waves have the same frequency, the new antennas would still work for cell phones and other wireless communication devices. And they would provide the same instantaneous delivery of information. In fact, researchers found their antennas performed better than traditional kinds.

One application that neurosurgeons are interested in exploring is a device that could sense neuron behavior deep in the brain. But bringing this idea to life has stumped researchers, until now.

"Something that's millimeters or even micrometers in size would make biomedical implantation much easier to achieve, and the tissue damage would be much less," Sun said. (Allie Nicodemo, NEU)

<https://news.northeastern.edu/2017/08/23/when-it-comes-to-antennas-size-matters/>
<https://www.nature.com/articles/s41467-017-00343-8>

(Also Google "magnetolectric antenna")

2018 PAID MEMBERSHIP

- AGØLSteve Loyd [E]
- AIØN..... Chuck Engberg* [E]
- KØEGG...John 'Tim' Eggertsen# [G]
- K3CRF Dave Smith [E]
- K5LBS Jerry Gault [E]
- KA0IJY Keith Keene [E]
- KBØFSI Pat McCollum [T]
- KBØLF Fred Eriksen [E]
- KBØOGO Roger Behrns* [E]
- KBØZZT George Bellairs [T]
- KCØDTK Joan Bellairs [T]
- KCØHYD John Titsworth [G]
- KCØHYE Shirley Titsworth [T]
- KDØNMD Dudley Allen [G]
- KEØBXB Kim Allen [T]
- KEØXQ..... Bill McCollum [E]
- KGØKR Beth Engberg* [E]
- KIØPY Kevin Faris [E]
- N5SEZ..... Ray McNally [E]
- NØLZH John Harrington [T]
- WØDBW Derek Winterstien [G]
- WØZY Dave McLaughlin [E]
- 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

**PLATTSMOUTH AMATEUR
RADIO CLUB
KBØSMX**

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Repeaters:

- 443.45⁺ is located in downtown Omaha
- 443.225⁺ is located in Murray.
- 147.48 Simplex is also in Murray.

Web Site

www.kb0smx.com

Maintained by Derek (WØDBW)

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**MINUTES of
the
MEETING**

The October 27, 2018 meeting was held at Mom's Café in Plattsmouth. The meeting was called to order at 8:22 am by President Roger Behrns.

Those in attendance were Roger (KBØOGO), Kevin (KIØPY), Ray (N5SEZ), Dave(WØZY), Bill (KEØXQ) Dudley(KDØNMD), Derek (WØDBW), John (WR5I), Chuck (AIØN), and Keith (KA0IJY).

The Minutes of the August meeting were approved on a motion by Dave and second by Bill.

The treasurer reported no expenses or receipts. This leaves \$285 in the repeater fund and \$690.35 in the general fund for a balance of \$975.35. Keith moved and Chuck seconded a motion to accept the treasurer's report. Passed.

The Annual Dinner will be at Famous Dave's in Bellevue on the last Sunday of January at 5 pm. A short meeting will be held at the dinner.

Dudley updated us on the Scout Jubilee and JOTA. They had two successful operations and he noted that he had five scouts and parents tell him that they were working on obtaining their tickets.

The meeting adjourned on a motion by Chuck and second by Dave at 8:26.

**Meeting Calendar
8am, November 24
at Mom's Café**

**No meeting in December
Annual Dinner 5pm, Sunday
1/27/19 at Famous Dave's
(No Saturday Meeting in Jan.)
8am, Sat February 23, 2019
8am, Sat March 30, 2019**

PLATTSMOUTH ARC MEMBERSHIP REGISTRATION FORM

Name		Call Sign		Class	
Address		City		State	
				Zip	
E-Mail			Phone #		
Spouse Name			Call Sign		Class
Membership Type	<ul style="list-style-type: none"> ● 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.
<input type="checkbox"/> Primary(\$15) <input type="checkbox"/> Spouse (\$5) <input type="checkbox"/> Student (\$5) <input type="checkbox"/> New Ham					
Any additional e-mail or cell phone #s?					