

## ELECTRONICS

# Need TV Antenna Change

Ultra-high frequency television signals not received clearly on most antennas used for today's TV. Another System would probably have to be installed.

► MOST TELEVISION antennas now being used will not be satisfactory for receiving ultra-high frequency television signals, E. O. Johnson and J. D. Callaghan of the Radio Corporation of America reported to the Institute of Radio Engineers meeting in New York.

That is because present-day antennas would have poor directional selectivity at the high frequencies, meaning that many unwanted signals would be picked up and would spatter screens with specks of television static.

Ghost images as well as other undesired signals could not be reduced or eliminated with antennas having such poor directional characteristics, the two men reported. Furthermore, because ultra-high frequencies are shorter in wavelength than conventional very-high frequencies, the ability of conventional antennas to use the received signals would be poor.

That means television watchers probably will have to install another antenna system and obtain some sort of a frequency converter unit for satisfactory reception of future ultra-high frequency television stations on present-day sets.

Because line-of-sight transmission is much more critical for ultra-high TV signals than for conventional VHF signals, and because reflection and signal-absorbing problems will be greater for UHF television, four special antennas were recommended for receiving those high frequencies.

First, the UHF broad-band triangular dipole, called "the butterfly" or the "bow-tie," will give good service in strong signal areas. It looks like two triangles which have their tops facing each other. The antenna supporting rod goes through the point where the two tops meet.

Second, the dual-V antenna, for areas of medium signal intensity. It looks like a hollowed-out diamond such as is printed on playing cards.

Third, the corner reflector, which is especially adept at ridding TV screens of unwanted ghosts. It looks like a rod having a fluorescent light reflector behind it, and is good for areas of weak signal strength.

Fourth, the Yagi antenna, which also is good for areas of low signal strength, and has good directional characteristics. It looks like a ship's mast having four crossarms of different lengths, the whole business lying in a plane parallel to the ground.

Meanwhile, at least one television manufacturing company has scheduled a commercial "UHF package" which will provide

video viewers with the appropriate UHF antenna, plus a converter which will allow present-day sets to receive programs transmitted on the ultra-high frequencies. The package should be available in October.

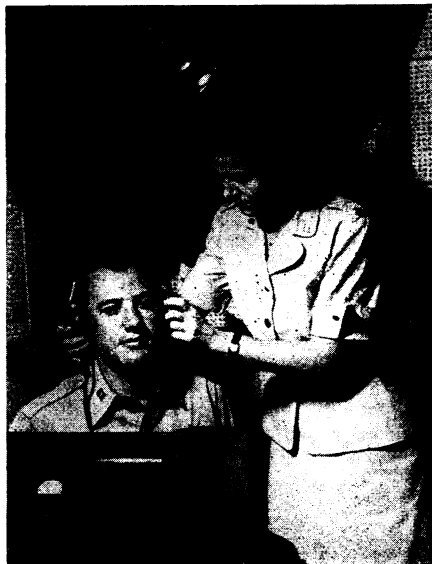
Science News Letter, March 22, 1952

## ASTRONOMY

## Nova Explodes In Southern Sky

► A NEW star has blazed forth in the southern sky. Too faint to be seen without a small telescope, this ninth magnitude nova is in the constellation of Scorpius, the scorpion, and is near its tail.

The new exploding star was spotted by Dr. Guillermo Haro, director of the National Astrophysical Observatory, Tonantzintla, Puebla, Mexico, who late last month discovered a "new star" in the constellation of Sagittarius, the archer. Last year Dr. Haro



**AIRCRAFT HEARING** — *Testing how U. S. Air Force Capt. Jack C. Green would hear if he were actually in a plane is Maj. Elizabeth Guild, an otolaryngologist at the U. S. Air Force School of Aviation Medicine. Such tests have shown that many pilots actually do hear well under flight conditions, though they may have slight difficulty with low sounds in a quiet room.*

found three novae in Scorpius, and in 1950 he spotted one in Scorpius and one in Hydra, the water monster.

For people in the southern part of the United States the nova is an early morning star; observers in the central part of the country must look for it close to the horizon. News of its discovery has just reached Harvard College Observatory, Cambridge, Mass., clearing house for astronomical information in the western hemisphere.

The nova reached maximum brightness on March 2. The star was not shown on a photograph of that region of the heavens taken Feb. 29 even though it included stars as faint as 13th magnitude. Thus the star at maximum was at least 40 times as bright as normal and possibly several hundred times as bright or even more.

Science News Letter, March 22, 1952

## METEOROLOGY

## Cooler Spring Expected for Eastern Seaboard and West

► THE WEST, beyond the Continental Divide, and the East, along the Atlantic seaboard, can expect a cooler spring than normal. And most of the nation should expect more rain than usual.

This is indicated in the U. S. Weather Bureau's extended forecast for the period until the middle of April.

Warmer than usual weather is expected in the states bordering the Gulf of Mexico. In other areas, about normal temperatures are indicated.

Regions not expected to have more than normal amounts of rain—only about as much as usual — are: The Great Lakes region, the South Atlantic states, the Rocky Mountain states, and Texas.

Science News Letter, March 22, 1952

## NATURAL RESOURCES

## Oil and Gas Reserves Hit All-Time Peak During '51

► AMERICA'S KNOWN reserves of liquid petroleum were increased by 2.7 billion barrels during the past year, the American Petroleum Institute and the American Gas Association announced here today. Natural gas known reserves were raised by 8.2 trillion cubic feet.

Furthermore, the reserves were strengthened despite a record-breaking production of petroleum and natural gas for industrial purposes.

The net increase of 2.7 billion barrels in proved liquid-petroleum reserves is the greatest one-year addition in history. It brings petroleum reserves to an all-time high of 32.2 billion barrels.

The net increase of 8.2 trillion cubic feet in natural gas reserves raised those reserves to 193.8 trillion cubic feet.

Science News Letter, March 22, 1952