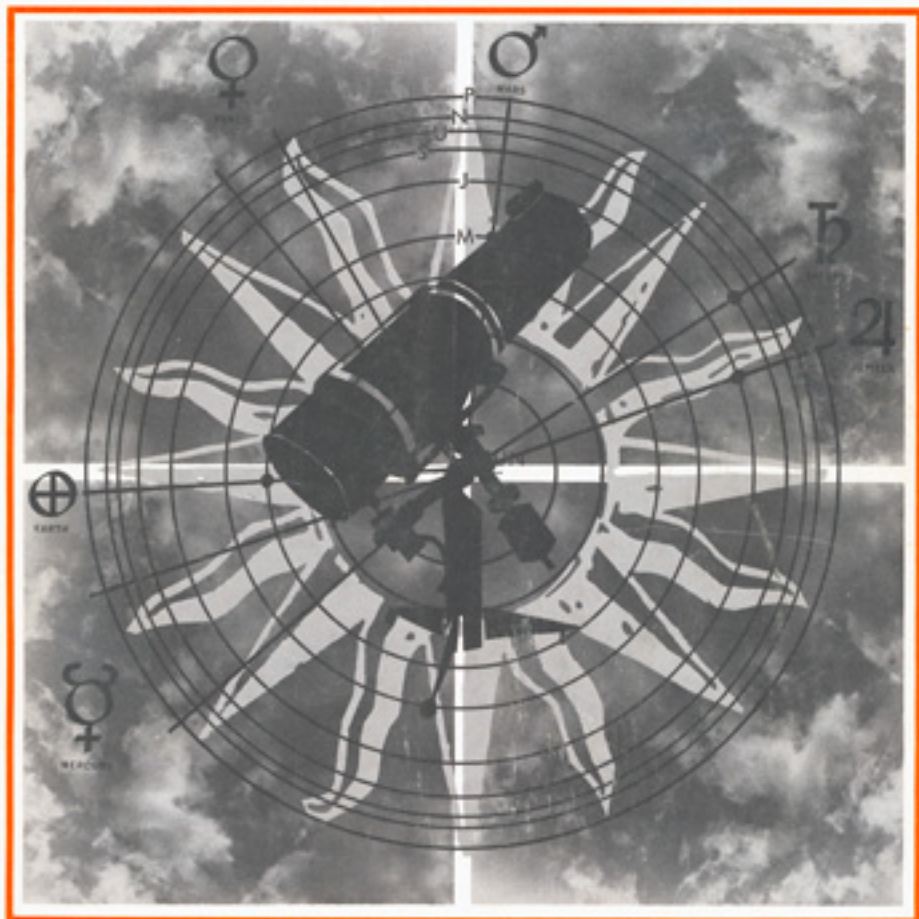


# QST

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**Radio Astrology – can the planets tell us about radio propagation?**

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# Tiera Luna para Colombia

Moonbounce work demands that all gear operate perfectly. This holds even more so when the operation is a portable expedition to another continent. The Pack Rats did it!

By James M. Morris,\* KH6HQG

*Pelicans swoop the shoreline as twilight approaches. An environmental engineer, a pharmacist, a motorcycle mechanic, and others occupy a beach house. They could be enjoying a cool drink after another warm summer day at the resort. Instead, they are celebrating, with their own special brew, the success of an effort that brought them together in that isolated spot — the first moonbounce expedition to South America — HK1TL.*

*Last month we reported that Allen Katz, K2UYH, completed the first Worked All Continents on 432 MHz and moonbounce by working that last continent, so obviously another station had to be on the other end of the two-way circuit. It was the Mt. Airy VHF Club, of which Al is a member, that mounted the expedition to provide South America's first 432-MHz operation. From the club's home in Philadelphia, Pennsylvania, five of the club's 82 members journeyed to Barranquilla, Colombia, for successful contact with 16 different EME (earth-moon-earth) stations and approximately 75 OSCAR Mode B stations, as well as to make new ties and stimulate amateur radio interest with the people there. Individuals and organizations in both the United States and Colombia contributed vast quantities of time and funds to make the operation a success.*

In 1956, a group of Philadelphia amateurs organized to actively promote serious vhf/uhf work. To characterize their aversion to commercially built equipment they adopted the nickname of "Pack Rats." Instead, they always

favor experimentation with home-built gear. An inspection of any member's garage or shack will reveal a wealth of parts and surplus gear acquired by trading. Over the ensuing years they have designed and built converters, receivers, transmitters, amplifiers and antennas for virtually all amateur vhf bands.

Their activity takes different forms. During the ARRL January VHF Sweepstakes plus the June and September QSO Parties, they put their latest creations to the real test. Consistently, they have topped the competition. Any active club, of course, operates a net. The Pack Rats have not one, but five nets every Monday evening on all bands from 50 MHz through 1296 MHz, and the ATVers (amateur television) conduct yet another net on Friday nights.

Their real pride and joy, however, is the W3CCX/3 moonbounce system lo-

cated in Revere, about 25 miles north of Philadelphia. On the farm owned by Pack Rat member Walt Bohlman, K3BPP, the club station is one of the most successful on the air, particularly after the addition of a 20-foot stressed parabolic dish in the 1972-73 winter. After they made their first complete contact with the Stanford Research Institute group, WA6LET, they celebrated with a cup of Red Zinger tea, a Pack Rat success trademark ever since. At the monthly meetings a report would be given about the latest activity. More and more new stations were noted from various states, countries and continents — except South America.

## Opportunity!

Early this year, a Colombian amateur, Bolhmar Aguilar, HK1AMW, moved into the same neighborhood as Elliott Weisman, K3JJZ, a director for the Mt. Airy VHF Club. Naturally, Bolhmar noticed the vhf antennas. Although his primary interest was high frequency, a classic ham chat followed, sparking the idea of operating moonbounce on his relative's property back in Colombia. The idea was discussed with Bolhmar's brother in Baltimore, Maryland, Socrates Martinez, HK1CWB/WB3AFY, and "they thought it would be a great thing for the country."

Immediately, Elliott presented the Colombians' operating site offer to the club's board of directors. They liked it and appointed him as coordinator. The red tape began. To make an official request from the Colombian government, all correspondence must be on official paper carrying a tax stamp. Price from the consulate: \$2 per sheet. Besides designing the request letter to detail all the operating and technical



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requirements, an additional task was to translate it into Spanish.

Several letter exchanges followed and to avoid paying duties upon entry, a list of the equipment had to be provided. Back to the consulate for more paper. A problem arose because they were still in the process of assembling the station. Obviously, a whole new station had to be put together since they wanted W3CCX to work the expedition. That was resolved.

Soon after the work started, the planning committee became aware that another coordinator would be needed in Colombia, so Socrates suggested Dr. Atenogenes Blanco, HK1BYM. He enlisted the aid of the Barranquilla Area 2 Radio Club who later provided invaluable service to the expedition.

### Logistics and Red Tape

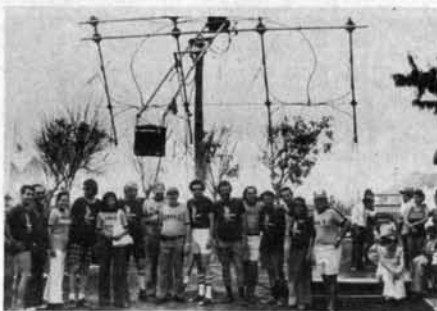
"We gave the guys building the stuff the outside dimensions and told them, 'that's how big you can make the thing.'"

Once more the Pack Rat philosophy prevailed. Tony Souza, W3HMU, built a complete 432-MHz kilowatt amplifier from scrounged parts, save for a \$1.25 part. Even the 8938 final tube came from the endless junk box. Other primary pieces of equipment that were produced specially for the expedition included a power supply by Bill Olson, W3HQT, and the exciter by Walt Bohlman. That used a 4X150 to a 4CX250 driver.

The most outstanding engineering feat had to be the antenna. Their 20-foot dish could not very well be taken down or even duplicated for air freight shipment. Instead, Walt, who designs antennas by profession, devised a system using 16, K2RIW-style 13-element Yagis so that everything could fit into six-foot crates. Besides the necessary azimuth and elevation rotation, the antenna had a third axis for polarization compensation.

Indeed, the moon itself had a large influence on the actual scheduling. Between perigee and apogee each month the path loss for the EME path varies by 2 dB — enough to mask a signal or bring it out of the noise. Other factors to consider were proximity to the sun and optimum window time for the other stations around the world. Cor Maas, VE7BBG, coordinated those schedules. Only after those considerations could they think about their convenience. They selected the last weekend in July.

More logistics problems crept in during the meantime. Shortly before the scheduled departure for the main group, Socrates' XYL, Rose Alva Martinez, went home to Colombia early to purchase the airline tickets. Although Aerocondor had given a discount, inflation crept in. Sheila Nassar, HK1CWD, however, made up the dif-



The Pack Rats moonbounce team gather with their Area 2 Radio Club hosts underneath the 208-element antenna for 432 MHz. It actually measured one dB of gain better than their 20-foot dish at the home station in Revere, PA.

ference. The customs paperwork had not been entirely settled, so Dr. Blanco made a trip to Bogota, capital of the country, for further negotiations.

### To Colombia

At last, all was loaded for the trip down. At Miami International another friend stepped into the picture. Russ Wicker, W4ZXI and a fellow moonbouncer, works there and made arrangements for the equipment to get on the same flight as the crew.

All did travel on the same flight. A couple of boxes had some damage, but that was the least of their worries. After two-and-one-half hours with customs officials, the gear was cleared only after Dr. Blanco posted a \$3000 bond assuring that all the equipment would be removed from the country after the specified stay.

Many of the crew had been working with the Atlantic Division convention to give a seminar on July 25, the same day of their departure. When they did arrive in Barranquilla the following day, they had a long press conference with the local media. The actual site was located in the town of Santa Veronica, about an hour-and-a-half ride from Barranquilla, with the local civil defense providing a truck and driver for the 1368 pounds of equipment plus crew.

### On the Air

On Tuesday, July 27, they set up the 20-meter link and the first message from W3KKN, their liaison back home, was that they had received permission from AMSAT to operate Mode B on Wednesday. Originally, they had not planned to take any OSCAR gear, but the organization had been alerted and provided the gear.

The first OSCAR and Mode B contacts were made that Wednesday while setting up the moonbounce station.

At last the big day, July 29, came. "When we patched everything together and plugged it in the first time — it

worked!" Bill Olson said of that first day. At near-vertical elevations the antenna had wind-loading problems and so the first schedule with K2UYH was missed as was the one with F9FT. Finally, during the 1800 UTC schedule a two-way was completed with K2UYH followed by W3CCX.

Another conference was held that evening with the Area 2 Radio Club, potential amateurs and c.d. officials. The Pack Rats showed *Ham's Wide World*, slides of their outings and gave more talks until midnight. Then, the hosts celebrated past 2 A.M. Nevertheless, the crew made the hour-and-a-half trip back to Santa Veronica for a couple of hours sleep before a 6 A.M. OSCAR pass.

Most of the following days were like that — 12 hours or more of moon schedules and OSCAR passes. A constant problem, however, was power failure. The first major occurrence was Friday afternoon from 2:30 P.M. until 6 P.M. because trees were being trimmed. After it was restored, the voltage measured only 95 volts forcing cancellation of almost all schedules that day. During the remaining days that weekend, power fluctuation continued to be a problem. But always, the Area 2 Radio Club would set out to find the source of the problem and more than once brought in emergency generators. Enough power was usually available to operate the 20-meter liaison. That was one of the prime factors that allowed successful rescheduling over the weekend. Ernie Kenas, W3KKN and his XYL, Bertha, W3TMP, provided that link every day of the operation.

### Reflections

All the way through, cooperation and coordination allowed everything to work out. Among those who helped defray the approximately \$9000 in expenses were Collins Radio, Mt. Airy VHF Club, Northern California DX Foundation and an anonymous Pack Rat member. Another less apparent, but very important person was Rose Alva Martinez who did all the cooking for the crew during their nine-day stay. Before departing, both the Mt. Airy VHF Club and the Barranquilla Area 2 Radio Club reached a mutual understanding that they would not lose contact with each other after the project was over.

Of course, it would have been unrealistic to expect all to have gone perfectly. But, as Weisman said, "It was probably better that we had the problems because I don't think that we would have had as close a relationship with the people down there as if we didn't have any problems." Thus, radio amateurs have once again demonstrated that their unique form of international goodwill can cross all boundaries to create a common success. QST