

Minutes from the November 8, 2005 GBIPG Meeting

Agenda:

1. Welcome Paulette Woody, new NRQZ coordinator
2. Harvey Liszt to discuss his involvement in
 - a. National and International spectrum management issues that relate to radio astronomy
 - b. GB/NRQZ spectrum management, local issues
3. Two and ten mile Radius rule enforcement policy
4. Measurement policy (GBT Rx room SE allowances)
5. On-site equipment

Attendees:

John Ford, Chuck Niday, Carla Beaudet, Wesley Sizemore, Paulette Woody

Minutes:

1. Meeting was opened by Carla Beaudet.
2. *Item 1 on the Agenda*: A brief welcome and introduction was made to Paulette Woody, the new NRQZ coordinator.
3. *Item 2 on the Agenda* was tabled due to Harvey being able to attend the meeting due to an out of town commitment.
4. *Item 3 on the Agenda* brought much discussion regarding the enforcement of WVC 37A Radio Astronomy Zoning Act.
 - a. A copy of the zoning act was distributed. It is available online at the following URL <http://www.legis.state.wv.us/WVCODE/37A/masterfrm2Frm.htm>
 - b. A proposed *Radio Astronomy Zoning Act Enforcement Policy* was distributed. It is as follows:

Radio Astronomy Zoning Act Enforcement Policy

Enforcement must be driven by “interference to observations” according to the Act, so enforcement should proceed as follows:

- 1) Document the interference in a RA receiver data
- 2) Locate source of interference
 - In certain cases (WIFI example) several sources may be producing interference on the same frequency. In order to get quiet spectra, ALL sources must be located and quieted.
- 3) Visit personally with owner of offending equipment and deliver the “please cooperate” letter. The letter shall state:
 - How the interference harms us

- Our legal authority for requesting that the equipment be turned off
 - What we are/aren't willing to do to help them comply
 - What further action will be taken if they don't comply
- 4) Contact the county prosecuting attorney if they don't comply (prosecuting attorney can level fine as described in the law)

5. Discussion brought up the following points/questions:

- a. How could this be enforced and to what expense is the Observatory obligated to fix RFI sources?
- b. It was noted that the WV Code restrictions were more restrictive than NRQZ limits. Currently, NRQZ limits were the restrictive limits that were being enforced.
- c. The WV Code had been in effect since the late 1950's and that it had not really been strictly enforced.
- d. It was stated that due to the increasing usage of wireless devices in the immediate area of GB and increased RFI issues due to this usage, an approved set of policies and procedures should be in place to minimize impact to the scientific observations.
- e. These policies and procedures need to be composed and recommended by the IPG Group and then submitted to Management for approval.
- f. The IPG has proposed an on-site interference mitigation policy, but it has never been approved by Management. John Ford and Carla Beudet will update the IPG Position paper, get input from the attendees of this meeting, and present the final product to the site director.
- g. Education of the community in the form of an information brochure, radio "call-in" shows and newspaper ads. Information should include types of devices that cause interference, the impact to the Observatory, etc. Also, the information should be in an "Educational and Informational" format to enlist the cooperation of the community.
- h. The TAP program could possibly be utilized to produce a "danger zone" map for specific devices which radiate at specific maximum power levels (like WIFI, for instance) Wesley Sizemore, Paulette Woody and Chuck Niday will work on providing these measurements.
- i. At Richard's discretion, and according to his direction, the Pocahontas Prosecuting Attorney will need to be contacted to insure cooperation regarding the enforcement of the WV Code. It is important to convey to the PA an understanding as to what and why these interference issues are of concern of the Observatory.

6. *Issue 4 on the Agenda* concerned the Measurement Policy for the GBT Receiver room and the SE (Shield Effectiveness). On November 4th, Carla and Paulette performed testing regarding these issues. The data is to follow:

MHz	Baseline pos. (dBm)	Test pos. (dBm)	Difference (dB)	Distance corr. (dB)	SE (dB)
200	-25.0	-71.0	46.0	1.5	47.5
300	-27.0	-77.0	50.0	1.5	51.5
600	-34.0	-80.0	46.0	1.5	47.5
900	-40.5	-80.0	39.5	1.5	41.0
1000	-45.0	-85.0	40.0	1.5	41.5

Discussion indicated that testing had been done before regarding the SE of the receiver room. The shielding effectiveness of the receiver room has been used in the past to adjust measurements of equipment to be installed in that room. Equipment that exceeds the limit by 40db will be considered acceptable if it is located inside the receiver room.

7. *Item 5 on the Agenda* pertained to the issue of on-site equipment that was discussed in part under the enforcement of WVC 37A Radio Astronomy Zoning Act.
 - a. Carla Beaudet expressed her concern regarding the lack of information regarding as to when new equipment was being brought on-site and installed, that no prior chamber testing was done to determine possible RFI issues.
 - b. A point of contact regarding new equipment being brought on-site would be of great assistance.
 - c. Carla mentioned that she would like to be able to test ALL devices or projects for potential issues prior equipment being installed at GB.
 - d. All equipment/projects must be in compliance of the enforcement policies prior to start-up.
 - e. “Temporary” permits for on-site equipment have continued for, in some instances, years and still operational.
 - f. Restrictions for equipment have been in place, but the compliance of these restrictions have not been completed or enforced.
 - g. A policy paper (the same “IPG Position Paper referred to in earlier discussion) had been prepared some 5 years ago, but had not been approved by Management so enforcement of on-site RFI concerns have been difficult to take action on. John Ford will be researching this to see if this policy paper is available for review.
 - h. That NRAO/GB must be compliant with regard to the policies before any cooperation could be expected from the community.
 - i. The GB site director must be supportive and provide approval of the policies regarding enforcement.

Conclusion:

The IPG Group is to update its IPG Position Paper, which will be reviewed by Management. The approval of Management is needed before the IPG can enforce this policy for on-site RFI compliance.

The IPG Group is to compile an Enforcement Policy for the Radio Astronomy Zoning Act, which will be reviewed by Management. The approval of Management is needed before the IPG can enforce this policy for off-site RFI compliance.

It is important to educate the community to promote a spirit of cooperation regarding the scientific objective of the Observatory in relationship to the impact of wireless devices on those observations. A brochure will be designed to further this objective.