



MULTIMEDIA RESEARCH

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Earth & Sky
Summative Evaluation
Study 2

Report for
EarthTalk, Inc.

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EXECUTIVE SUMMARY OF *EARTH & SKY* SUMMATIVE EVALUATION
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Earth & Sky is a daily short-format science series for both commercial and public radio. Produced by EarthTalk, Inc. of Austin, TX, the series is hosted by Deborah Byrd and Joel Block and consists of 90-second programs on a wide variety of topics mostly drawn from environmental sciences, earth sciences and astronomy. With support from the National Science Foundation, Multimedia Research presents the second study of a two-part summative evaluation on the impact of *Earth & Sky* on public radio listeners, focusing on traditional formats as well as the new “Edge of Discovery” programming that presents scientists describing their own research.

The evaluation focused on what demographic or background characteristics relate to whether or not one listens to *Earth & Sky* and to frequency of listening; what effects the series has on listeners and what kind of actions the series has prompted in listeners. Questionnaires were mailed to random names drawn from member subscriber lists of public radio stations serving the areas surrounding Missoula, MT, Columbia, MO, and Boston, MA. Of the 2964 questionnaires that adult public radio members received, 2005 or 68% were returned for analysis. Given that 2.1 million listeners contribute to public radio according to CPB revenue report data and that there are about 21 million listeners according to Arbitron estimates, our contributor lists represent about 10% of the listening audience. Thus, we can generalize our results to all subscribers and to about 10% of the total public radio audience.

Who are Listeners of *Earth & Sky*?

Almost 9 out of 10 public radio member respondents reported listening to *Earth & Sky*. Five out of 10 respondents heard the series “frequently,” and 4 out of 10 heard it “sometimes.” Our respondent sample is typical of a public radio member audience – more educated, better employed, older with fewer minorities compared to the general U.S. adult population. Listeners are significantly younger and better educated than non-listeners; however, age and education together predict only 2.5% (R^2) of the variance in whether or not one listens to *Earth & Sky*.

Listeners rated themselves as significantly more interested in science and significantly more knowledgeable about science than non-listeners. Also, listeners were significantly more likely than non-listeners to list “radio” as one of their two major sources of science news, whereas non-listeners were significantly more likely to list “television” as one of their two sources. “Magazines/journals” and “newspapers” were also major sources of science news for both groups.

Listeners differed with respect to science attitudes in a few ways. Listeners agreed significantly more than non-listeners that they like learning how contemporary scientists carry out their research, that it is important to understand the process of science discovery, and that science can be understood and enjoyed on some level by everyone.

However, both listeners and non-listeners equally felt that it is important to hear from scientists about their research – this result supports the need for scientists themselves presenting research in the “Edge of Discovery” format.

Appeal of *Earth & Sky*

Listeners rate the series as highly appealing. Nine out of 10 listeners agree or strongly agree that they “enjoy listening to the series,” and 8 out of 10 agree or strongly agree that they “listen attentively” to the show. Nine out of 10 listeners disagree or strongly disagree that they “dislike hearing scientists talk about their own work on the show.”

Those who reported listening “frequently” to *Earth & Sky* enjoy the series more, listen more attentively and like hearing from scientists more than those who listen “sometimes.” Listeners who listed “radio” as a primary or secondary source of science news felt they enjoyed listening more to the show.

Comprehension of *Earth & Sky*

Listeners rate the series as highly understandable. Nine out of 10 listeners disagree or strongly disagree that the “information on *Earth & Sky* is too technical” and that “the process of science is confusing when discussed on the radio show.” The series information was rated as “usually familiar” by less than a third of the listening audience, novel to more than a third and sometimes familiar and sometimes novel to the remaining third of listeners. Thus, the information on *Earth & Sky* is targeted at an appropriate level to reach the mass radio audience effectively.

Those who reported listening to the series “frequently” found it more understandable than those who listened “sometimes.” The higher a listener’s estimation of their knowledge of science was, the more understandable the series was rated. Those who listed television as a primary or secondary source of information were more likely to feel less comfortable with the show’s technical level, perhaps missing TV’s visual support.

Learning from *Earth & Sky*

Listeners felt they learn from the series in a variety of ways. Nine out of 10 listeners agree or strongly agree that the series “teaches interesting discoveries about the natural world.” More than 8 out of 10 listeners feel they “have expanded their knowledge of science by listening” and have “increased their awareness of science news topics.” Two-thirds of listeners agree or strongly agree that the series “has affected the way they look at the night sky” and that the series keeps them “up to date with current environmental science.”

“Frequent” listeners felt the series had significantly more impact on their learning than “sometime” listeners. Those who chose radio as a major source for their science news

also agreed more strongly that the series keeps them up to date, increases their awareness of science news topics and affects the way they look at the night sky.

Impact of *Earth & Sky*

An open-ended question regarding how respondents felt *Earth & Sky* has affected them personally elicited answers from 84% of the sample and yielded three major categories of impact. Of all listeners who wrote about any personal impact, 91% indicated positive impact. Almost half of listeners reported a positive affective impact -- listeners found the show interesting, enjoyable, and felt it increased their appreciation of the natural world. Two-fifths of listeners focused on the series' positive impact on them cognitively -- listeners felt they learn from the series, that it increases their knowledge or understanding of the natural world and that they learn information to which they would not normally be exposed. The series motivated 14% of listeners to take action, mainly looking for celestial events. "No effect" was reported by 6% of listeners, and a small 2% of listeners disliked the short format.

Provided with a list of 11 different actions, respondents determined whether listening to *Earth & Sky* had ever prompted them to take those actions. The most frequent activities are discussing topics with others (74%), viewing the night sky (71%), reading related information (49%), searching for more information about a topic (35%) and accessing a web site (32%). Other prompted activities include modifying personal habits or philosophies (20%), visiting a planetarium or science museum (18%), purchasing a book or other item (15%), making donations to a non-profit institution (14%), using content in teaching (12%), and writing to *Earth & Sky*, a politician or scientist (3%).

Those who heard the show more frequently were more likely to report that the show had prompted them to action. Those with post-graduate education were more likely to use content in teaching than those with less education. When encouraged to describe other actions that have been prompted by their listening to *Earth & Sky*, respondents listed a small but varied set of actions, including environmental activism.

Half of the listeners wrote of a positive impact of the "Edge of Discovery" format, featuring scientists speaking of their research. Listeners appreciated and enjoyed the format; thought the format added a personal dimension to scientists and science; acquired a better understanding of scientific inquiry; appreciated the credibility of hearing from the scientists themselves; felt a greater respect for scientists and science; and indicated the format humanized scientists and science. A small 1% of listeners complained that the show was too short for scientists to present their research. The remaining listeners either did not answer the question (25%), did not recognize the format (5%), felt no impact (10%) or felt no impact because they already had a positive attitude that the format reinforced (6%).

In conclusion, 86% of our public radio members listen to *Earth & Sky* and 47% hear it frequently. Listeners rate the series as highly appealing and understandable. The series has a strong positive impact on listeners' awareness and comprehension of science issues

and scientists and a considerable influence on listeners' actions beyond the 90-seconds. More frequent listeners report stronger impact than less frequent listeners. The series clearly acts to encourage listeners to look at the night sky differently but also demonstrates a critical multiplier effect by inspiring significant numbers of listeners to discuss science with their colleagues, friends and family members. Comparisons of listeners currently versus listeners three years ago reveal significant differences only with respect to Internet usage. Current listeners report higher use of the Internet as a major source of science news and were more likely to report that *Earth & Sky* prompted them to access a website. Otherwise, *Earth & Sky* continues to maintain the high listener appeal and impact levels that it obtained three years ago.