

Subject: *Initiation of the **LightWork** Memo Series*
Memo: 0, revision 3
From: Glen Langston
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Summary: Establishment of the LightWork Memo series for Citizen Science with Radio Telescopes

We propose to establish an informal series of numbered memoranda on topics related to Citizen Science with Radio Telescopes. This series is intended to encourage the public in the United States, and throughout the world, to collaborate on the design, construction and operation of Radio Telescopes for the purpose of furthering science, engineering and education.

Background

The LightWork memos series guidelines, described below, are based on the successful OVLBI Memo Series initiated by Larry R. D'Addario of NRAO (and also of the Jet Propulsion Laboratory). It is of fundamental importance to encourage all involved to contribute to the series. This memo series is motivated by the success that a focused memo series can have on organizing design and construction of large astronomical facilities. The present document is the first of the **LightWork** Memo Series.

The memo series title has two implications. The first is that this memo series concerns **Work** with radio wavelength **Light**. The second is that we envision that those creating the radio telescopes will form a large collaboration, making a significant contribution to the world's understanding of the universe. **Many hands make LightWork.**

Topics

Topics to be covered include: Design of low cost radio telescopes; Design of sensitive amplifier systems for telescopes; Software Defined Radios; Recording and Analysis of radio spectra; Radio Frequency Interference mitigation for small telescopes; Transient event detection; Educational strategies; Observing strategies; Software for mapping the Galaxy; Software for presentation of observations; Telescope pointing and control programs; Science Collaboration plans; High school and College teaching guides; Methods of motivating large groups participating in research projects; and any related matters.

Memo series of this type have been used in many projects at the National Science Foundation's (NSF's) National Radio Astronomy Observatory (NRAO) and Green Bank Observatory (GBO). These memo series have been very successful in providing a way to organize information and allow for its rapid and widespread dissemination. For those who are not familiar with the concept, the basic ideas are as follows. Any interested person may write and submit a technical memo on a subject relevant to the series. A central distribution point is established to receive contributions, assign each a sequence number, enter it into an index.

The contributions are not reviewed by anyone, and therefore have no official status whatsoever; they can, and often do, contain preliminary ideas and opinions. The numbered memos can then be referred to in future work, and since most people actively working on a

given project will have copies, there is a common, written basis for discussions. Of course, this is no substitute for formal documentation of actual design decisions.

For the present series, the distribution point will be the website opensourceradiotelescopes.org. This web site is publicly accessible to all for reading the documents. A login is required for submitting the documents and updating the web pages. The series has an index and authors are requested to update the list of memos (and avoid use of memos numbers previously used). The index will include title, author, date, a one-sentence summary (if provided by the author), and some status codes (e.g., we will attempt to flag obsolete memos).

The web site will be used to maintain an email list of interested parties.

Periodically an email with an update of the list of new memos, and any recent progress, will be sent out. The only guidelines are that the memos should be closely related to the subject of the series, and should be kept reasonably brief. Copies of papers or data published elsewhere should not be included, but references should be given. Voluminous information (like long listings) that might be of value to only a few readers should be omitted, but instructions for finding that information should be given.

Submission of contributions in machine-readable form is encouraged. Files should be ASCII, or any other word processing format considered widely accessible. Pdf versions of original documents are also encouraged. Other formats, such as TeX or LaTeX are acceptable, but if the input consists of multiple files, these should be Zipped or Gzipped together before submission.

Thanks

Thanks in advance for all constructive contributions to the ***LightWork*** memo series!