September 7, 2012
Berlin, Germany

Re: community standard data format for light pollution measurements

Dear participants of the 12th European Symposium for the Protection of the Night Sky,

The last several years have seen an incredible increase in the number of persons and organizations systematically performing long-term measurements of urban skyglow (light pollution). While a small number of these sites are networked, the majority are not. The increase in measurement stations is mainly due to the introduction of two low cost lightmeters: the Sky Quality Meter and the International Year of Astronomy Lightmeter. In addition to these devices, the International Dark Sky Association (IDA) has developed a more precise version (the Night Sky Brightness Monitor), and other groups have developed prototype units (e.g. DigiLum, Sky Brightness Meter).

It has been four decades since the first quantitative studies of light pollution in the 1970s, yet there does not exist a standard format for reporting such measurements. As a result, despite the recent dramatic increase in monitoring activity, it is a major task to attempt to compare data taken at different sites. As more sites are added the problem becomes more extreme, and the risk of loss of data (due to e.g. insufficient meta data) increases daily. To remedy this situation, it is necessary for the light pollution research community to agree upon a standard format for reporting skyglow measurements.

With this goal in mind, the participants of the Cabauw Lightmeter Intercomparison Campaign workshop on May 9, 2012 developed a proposal for a standard format. The design criteria were:

- Human readability (for the operators to check their own data)
- Machine readability and format standardization (for insertion into a database)
- Inclusion of both universal and local timestamps
- Record of all meta data conceivably necessary for an analysis
- Storage of all possibly relevant device generated data (e.g. temperature)
- Anticipation of the needs of not-as-yet developed detectors
- Level0 data format (uncalibrated values that will never change)
- Exclusion of all non-skyglow data for simplicity (e.g. weather logs)

The proposed format was shared via private email and public distribution lists, and went through several revisions as improvements and especially clarifications of the instructions were made by the community. We believe that the format is in a close to final form, and we are now seeking public endorsement and final comments from the light pollution community. The 12th European Symposium for the Protection of the Night Sky (and the earlier IAU symposium) allow us an excellent chance to ensure that the format is vetted

by as close to the entire light pollution research community as possible. We ask you to consider the attached documents, and alert us immediately if you notice a potential weakness or problem in the format as currently designed. During the symposium, the format will be described by Christopher Kyba and you will have an opportunity to publicly express your endorsement. Assuming that it is met with widespread approval at the meeting, we intend to announce the formal adoption of the format in a letter to an astronomy journal, including a list of all of the light pollution community members that have endorsed it. A list of the current endorsers follows this letter.

Sincerely,

Christopher Kyba (Freie Universität Berlin, Germany)
Dorien Lolkema (National Institute for Public Health and the Environment, Netherlands)

List of format endorsers by institution:

Astronomie-Werkstatt "Sterne ohne Grenzen"
Harald Bardenhagen

Attivarti.org/BuioMetria Partecipativa
Andrea Giacomelli
Francesco Giubbilini

Freie Universität Berlin
Jürgen Fischer
Christopher C. M. Kyba
Thomas Ruhtz

International Dark Sky Association
Perit Alexei Pace (Malta Section)
Bob Parks

ISTIL - Light Pollution Science and Technology Institute
Fabio Falchi

Knightware LLC
Phyllis K. Lang (owner)

Leibniz Institute of Freshwater Ecology and Inland Fisheries
Franz Hölker
Helga Kuechly

London Metropolitan University
Axel Jacobs

McMaster University
Douglas L. Welch

NOAO – National Optical Astronomy Observatory
Constance Walker

RIVM - National Institute for Public Health and the Environment, The Netherlands
Marty Haaima
Dorien Lolkema
Peter den Outer

Ryerson University
Peter Hiscock

Sotte le Stelle
Wim Schmidt

The Urban Wildlands Group
Travis Longcore (Science Director)

Unihedron
Anthony Tekatch (president)

l'Universite de Sherbrooke
Martin Aubé

Universidad Complutense de Madrid
José Gómez Castaño
Francisco Ocaña González
Alejandro Sánchez de Miguel
Jaime Zamorano

Universität Osnabrück
Andreas Hänel

University of Birmingham
James Hale

University of Bremen
Georg Heygster
Kai Pong Tong

University of Innsbruck
Stefan Noll