

WCRP Observation and Assimilation Panel (WOAP)

**Report from WOAP-1 meeting
New York, 1-3 June 2005**

(Final Version 17 August 2005)

SUMMARY of ACTIONS and RECOMMENDATIONS

1/ GEO: Include WCRP priorities in 2006-2007 GEO workplan. Need to include continuity of WCRP global data sets, introduce reanalyses coordination and reprocessing project in 2-years tasks. Under GEOSS there seem to be opportunities, if known about, to make proposals: Need to keep projects informed about proposals and possible opportunities. **(Action: Sommeria with Duchossois).**

2/ GCOS: Manton to provide a one page summary of issues for WOAP: These include how to insure WOAP-GCOS coordination without overlap? What to expect from WCRP with respect to implementation of GCOS plan?

3/ Reanalyses

There is a need for WCRP to establish a clearing-house for reanalyses (build on CLIVAR material), and also develop the strategy of staggering analyses, how to advocate it, and how to progress in building the basic dataset (given additions and ongoing development, plus results from reanalyses). **Action: Reanalysis task group to prepare a short document on rationale for reanalyses.** This should summarize merits of reanalysis (not just atmospheric) as essential part of observing system, and the benefits to be gained from ongoing activities (including avoiding stop-start and loss of personnel). This includes need to exploit new data (such as ocean ARGO observations) to make them into useful products. This should be followed by more focus on atmospheric reanalyses and coordination of their scheduling, and staggering of activities across the 3 major groups involved (EC, US, JMA); especially the development of the basic data and improvements in homogeneity. This document can be used to promote the reanalyses, in justifying a workshop and conference, and in furthering US activities. **(A. Simmons, Chair; Stammer, Flato)**

4/ Explore proposal for a reanalysis workshop to be tentatively held at ECMWF end of June to beginning of July, or November 2006. This should lead to a WCRP policy and a letter sent to major potential reanalysis centres. **(Simmons)**

5/ Reanalyses Conference: A proposal to hold the next major reanalysis conference in Japan was passed on by Toshio Koike and preliminary response by JRA25 Implementation Team is positive. When JMA expresses a clearly intention to host the conference, D. Stammer will prepare a letter to the signature of D/WCRP, including mention of co-sponsorship by WCRP, to be done under auspices of WCRP and WGNE in Japan (JMA) in 2007. This conference should embrace ocean and coupled reanalysis, with a specific session on the second subject.

6/ The reprocessing task group should query each WCRP project concerning variables suitable for reprocessing in terms of both need and readiness, and commitments. They will make a proposal of principles, to be circulated within the panel. There is a need to include this topic in GEOSS (Action: Duchossois).

7/ Draft a letter on need to exploit satellite data we already have and continue observational streams on behalf WCRP, to be signed by P. Lemke or D/WCRP to CEOS members and GEO co-chairs. Point out GCOS IP, WCRP needs, GEOSS links

- a) Start with thanks for all the good stuff happening, and we are looking forward to things in pipeline (cloudsat, etc)
- b) Remind of need to exploit the data we have, with improved calibration, correcting for things we have discovered and learned, and promoting the need for reprocessing.
- c) Point to the continual need for renewal of observational streams, quasi-operational continuity, such as sentinel, and in situ links.

The first draft by Rossow should be prepared with Duchossois and Trenberth, and circulated to panel members for advice. It should be sent officially ahead of the July G8 meeting. (Done 22 June)

8/ CEOP task group to formulate summary, commentary on potential overlap, and recommendations for how to ensure better integration of CEOP within WCRP. Assessment report to be prepared for JSC in July 2005. Task group (Manton, Chair; Belward, Kent, Rossow, Flato)

9/ Recommendations from GSOP to be transmitted to operational centres (action prepared by Stammer with WOAP secretariat, letter to be signed by K. Trenberth)

10/ Task group on assimilation to write short report on issues to be taken up by WOAP (to be first circulated within WOAP). Task group (Lorenc, Chair; Stammer, Simmons, Key).

11/ Shukla will represent WOAP concerns and interests in climate observations within the THORPEX scientific steering group.

12/ The data management task group will review existing WCRP web structure and sites, and make recommendations for WCRP-wide over-arching structure and site contents. The data management task group will propose a data policy for WCRP based on existing project documents. After final comments by projects, such a policy will be adopted (WOAP secretariat will help in the process). Task group (Koike, Chair; Harrison, Rossow)

13/ WOAP-1 presentations will be put on WCRP/COPES support unit website with password.

LIST OF TASK GROUPS

Reanalyses: Simmons, Stammer, Flato

Reprocessing: Duchossois, Rossow, Belward, Sommeria

CEOP: Manton, Belward, Kent, Rossow, Flato, (Polavarapu)

Data assimilation: Lorenc, Key, Stammer, Simmons

Data management: Koike, Harrison, Rossow

MINUTES FROM WOAP-1 MEETING

1., 2., 3. *Introduction, WCRP/ COPES, role of WOAP (Trenberth)*

Bill Rossow welcomed WOAP to GISS and GISS provided excellent facilities, including coffee and tea, snacks and so forth. The introduction of members to each other was the first order of business. The agenda is in the Appendix I; and presenters are listed below as part of each topic. The attendance is in Appendix II.

As a first remark, it is proposed that WOAP should be pronounced Wo-ap, that is something in – between the muted “a” as in “Soap” and the explicit pronunciation of the letters.

The funding for WOAP meetings is a concern, NOAA has contributed this time in addition to WCRP, and a minimum of funding will be required for future meetings. Space agencies may be solicited for contributions, if the right arguments can be put forward. In any case work by e-mail will be an essential part of the panel's activity.

WCRP COPES strategy was briefly outlined, following the JSC XXVI document, March 2005. The WCRP and COPES brochures were introduced.

Some important challenges for WCRP are to:

- a) Utilize improving observing and assimilation systems
- b) Address the seamless prediction problem: weeks-seasons-years-decades-centuries.
- c) Address the prediction of the broader climate /earth system
- d) Demonstrate the use for society of WCRP-enabled predictions

In the discussion it was mainly emphasized that the COPES panel structure with WOAP and WMP is laid down to prevent duplication of projects within WCRP and to facilitate connections and synergies, respectively for observational and modeling aspects. There is a risk of overlap between GCOS and WOAP, and the presence of the three GCOS panel chairs is welcome in order to help delineate their respective domains of action. The GCOS implementation plan will be used as a reference document for the definition of WOAP activities. In order to fulfill COPES objectives, temporary task forces have been set up, the first one being the Task Force on Seasonal Prediction, and WOAP will have to help define corresponding observational requirements.

More detailed description of the WOAP's mission followed. The terms of reference of WOAP (cf. Doc.5) were adopted with a minor change (§a. to *identify* instead of to *define*), in order to clearly delineate the border between GCOS and WCRP.

Terms of reference for the WOAP are:

- a. to identify observational requirements for climate system analysis and prediction and assist in optimization of observational strategies for sustained observation and to act as a focal point for WCRP interactions with other groups and programmes
- b. to promote and coordinate synthesis of global observations from the atmosphere, oceans, land and cryosphere, and for the fully-coupled system, through analysis, reanalysis and assimilation activities across WCRP, including the Modelling Panel;
- c. to promote and coordinate WCRP information and data management activities, including development of web sites, in liaison with WCRP projects.

4. *GEO, GEOSS (Duchossois)*

An update of GEO activities was provided. The GEO executive committee has been formed (12 members), with 4 co-chairs EC, USA, China, South Africa. GEO presently has 56 member countries and 44 international organisations are participating (incl. WMO, UNEP, ICSU, IGOS-P,

GCOS, WCRP...). The ten-year GEO implementation plan has recently been made available; it defines short and long term targets (2, 6 and 10 year) for 9 societal benefit areas (health, climate, water, energy, agriculture, weather, disasters, ecosystems, biodiversity). At the moment the tasks for 2005 (work packets) have been put together by the provisional GEO Secretariat and proposals for the period 2006-2007 are being expected before 30 June. GCOS and WCRP are the main interlocutors of GEO in the climate domain, and WOAP is the natural WCRP interface with GEO. WCRP can interact directly with GEO in plenaries and through contacts with the secretariat. For issues in relation with space or requiring resources from space agencies, CEOS-SIT will act as interface between organizations or programmes and GEO. There will be involvement of WCRP in the S&T and user interface mechanisms.

During the discussion, it was recalled that a number of topics related to GEO issues have been covered by the WCRP satellite Working Group in two reports (cf. WMO/TD N° 1243-sept 2004). WOAP is supposed to, as part of its mandate, extend the work carried out by the former satellite WG.

-Short term action: Include WCRP priorities in 2006-2007 GEO workplan. Need to include continuity of WCRP global data sets, introduce reanalyses coordination and reprocessing project in 2-years tasks. Under GEOSS there seem to be opportunities, if known about, to make proposals: Need to keep projects informed about proposals and possible opportunities. (Action: Sommeria with Duchossois).

5. GCOS Manton (AOPC), Harrison (OOPC), Belward (TOPC)

AOPC (Manton)

M.Manton briefly presented the GCOS Implementation Plan and the GCOS climate monitoring principles. With regard to reanalyses, he noted that it is:

- (i) a shared activity,
- (ii) involves coordinated dataset development (e.g., reanalysis leads to improved TOVS) that need to be in dataset upgrades;
- (iii) improve homogeneity of data;
- (iv) address scheduling and coordination/ staggering of major reanalyses;
- (v) provide open access to data, and
- (vi) promote diagnostics.

One specific requirement would be a forum to discuss data assimilation for coupled models. Examples of specific GCOS WGs: SST/sea-ice; surface pressure; upper air temperature; GSN/GUAN networks.

Manton to provide a one-page summary of issues for WOAP: These include how to insure WOAP-GCOS coordination without overlap? What to expect from WCRP with respect to implementation of GCOS plan?

OOPC (Harrison)

We are in the initial implementation of an ocean observing system. The continuity of satellite missions (vector winds, SST, precipitation, altimeter, color...) needs to be warranted. It is necessary to develop syntheses and products and to seek funding beyond the research mode (note especially the end of GODAE in 2007).

TOPC (Belward)

As number of products are not finalised (under development), there is a strong need for intercomparisons and evaluations of products (including the algorithm basis). As an example the calibration of AVHRR changes over time, implying a need for reprocessing. Moreover there is no systematic monitoring of many parameters like lake levels, soil wetness, ... The continuity of observations and satellite missions, such as Landsat, and calibration/validation are the main issues for TOPC.

6. *Reanalyses* (Trenberth, **Simmons**, Stammer)

A reanalysis task group was set up: A. SIMMONS, D. STAMMER, G. FLATO

There is a need for WCRP to establish a clearing-house for reanalyses (build on CLIVAR material), and also develop the strategy of staggering analyses, how to advocate it, and how to progress in building the basic dataset (given additions and ongoing development, plus results from reanalyses). Note the ongoing aspects should deal with changes in observing system through OSEs and OSSEs, and attribution. **Action: Reanalysis task group to prepare a short document on rationale for reanalyses.** This should summarize merits of reanalysis (not just atmospheric) as essential part of observing system, and the benefits to be gained from ongoing activities (including avoiding stop-start and loss of personnel). This includes need to exploit new data (such as ocean ARGO observations) to make them into useful products. This should be followed by more focus on atmospheric reanalyses and coordination of their scheduling, and staggering of activities across the 3 major groups involved (EC, US, JMA); especially the development of the basic data and improvements in homogeneity. There is a need to establish a single contact point in the US. This document can be used to promote the reanalyses, in justifying a workshop and conference, and in furthering US activities. It will lead to a WCRP policy and a letter sent to major potential reanalysis centres.

Explore proposal for a reanalysis workshop to be tentatively held at ECMWF end of June to beginning of July, or November 2006. Funding from GEO should be explored. The workshop may provide an opportunity for subgroup of WOAP on assimilation and reanalysis to meet. (**Simmons**)

Reanalyses Conference: A proposal to hold the next major reanalysis conference in Japan was passed on by Toshio Koike and the preliminary response from JMA is positive. This is to be done under auspices of WCRP and WGNE in Japan (JMA) in 2007. **D. Stammer** will prepare a letter to the signature of D/WCRP, including mention of co-sponsorship by WCRP. This conference should embrace ocean and coupled reanalysis, with a specific session on the second subject.

7. Reprocessing and development of global climate products covering the last 30 years, using satellite and in-situ data (**Sommeria**, Trenberth, Rossow, Belward)

A reprocessing task group was set up: ROSSOW, BELWARD, DUCHOSSOIS, **SOMMERIA**

Reprocessing of many satellite-based datasets is desirable. Examples were shown and discussed by Rossow, Trenberth and Belward. GEWEX has an active project to pursue reprocessing of the GEWEX datasets. There is a need for coordination of approaches from WCRP projects to the space agencies on this issue. There is a strong need for an education process to teach agencies and others (including peers on panels, etc) the process of how these data get improved and that reprocessing is fundamental.

G. Sommeria reminded the panel of findings and recommendations from the WCRP satellite working group, from two meetings held at the end of 2002 and 2003. Conclusions have been approved by JSC in spring 2004. A coordinated reprocessing of satellite and situ data covering the last 30 years at WCRP level was proposed, with more precise input on priority actions expected from CLIVAR, CliC and SPARC. This also responded to a GCOS recommendation and the GCOS IP should be used as a reference. Further vetting is needed on the variables or products for which short term progresses can be expected from reprocessing by not just focusing on problems but also solutions and readiness for improvement. A proposal for a workshop with space agencies was discussed, but set aside for now, as well as the possibility to include this project in the GEO planning, as a way to ensure some financial support for this activity. The need to engage the Eumetsat SAFs was also discussed.

- The task group should query each WCRP project concerning variables suitable for reprocessing in terms of both need and readiness, and commitments. They will make a proposal of principles, to be circulated within the panel. There is a need to include this topic in GEOSS (action Duchossois). This issue will also be included in letter to CEOS, see below.

8. Satellite observations/agencies (Rossow, Koike, Trenberth, Sommeria)

B. Rossow introduced the subject, recalling the leading role of WCRP and GEWEX as interlocutor of space agencies for stating the needs of the climate research community with respect to space missions and data. A. Belward reminded the panel that the GCOS Implementation Plan is now the reference for space mission requirements for climate. G. Sommeria recalled the content of the satellite WG report with respect to short term and longer term WCRP priorities. E. Harrison insisted on the importance of allowing the transition of research missions into operational systems. K. Trenberth referred to the NRC decadal study for defining the long-term US strategy after EOS. The example of the water cycle measurement strategy may be a possible model for the kind of prospective thinking required.

Action: Draft a letter on need to exploit satellite data we already have and continue observational streams on behalf WCRP, to be signed by P. Lemke or D/WCRP to CEOS members and GEO co-chairs. Point out GCOS IP, WCRP needs, GEOSS links.

- (i) Start with thanks for all the good stuff happening, and we are looking forward to things in pipeline (cloudsat, etc)
- (ii) Remind of need to exploit the data we have, with improved calibration, correcting for things we have discovered and learned, and promoting the need for reprocessing.
- (iii) Point to the continual need for renewal of observational streams, quasi-operational continuity, such as sentinel, and in situ links.

The first draft by Rossow should be prepared with Duchossois and Trenberth, and circulated to panel members for advice. It should be sent officially ahead of the July G8 meeting. Done 22 June.

There is a need for regular review of space agency plans and new missions by WOAP, in a generic approach without favoring specific instruments, as done in the report of the satellite working group. The role of WOAP for shorter-term reactions, such as what happened for TRMM was also discussed. The whole topic requires further discussion at the next WOAP meeting.

9. CEOP (Koike) www.ceop.net

Presentation of Phase 1 experiment displayed very impressive results and CEOP work was fully appraised by the panel. CEOP, initiated by GEWEX, has evolved and come a long way. The evolution may have created some disconnects within the WCRP framework. It is the first COPES observation-oriented project and represents a prototype for a climate data management system. Presentation of scientific objectives for Phase 2 revealed a research phase 2005-2006, and observation phase 2007-2010. Phase 2 proposes an extension of initial CEOP objectives in areas where some activities are already going on within WCRP. This is an opportunity to fix any disconnects. In particular, it is necessary to avoid duplication of efforts in the following areas: aerosols (GRP); watershed hydrology (GHP), monsoon studies (pan WCRP, CLIVAR, GEWEX), model analysis intercomparison projects (WGNE). The panel noted the strong involvement and support from CEOS and that major CEOP aspects are embedded in the GEO plan, as part of the water resources societal benefit area. This implies transition to operations. Because CEOP is a research programme, it develops prototypes, and CEOP is urged to think about the legacy it will leave behind or how it transfers the technology to operational or ongoing programs.

CEOP task group (Manton, Chair; Belward, Kent, Rossow, Flato, Polavarapu) to formulate summary, commentary and recommendations for how to ensure better integration of CEOP within WCRP. Assessment report to be prepared for JSC in July 2005.

10. Data assimilation (DA) (Lorenc, Stammer, Key, Rossow, Flato, Polavarapu)

The committee heard presentations on the international Prague conference (April 2005) and WGNE activities by A. Lorenc, and on CLIVAR GSOP assimilation work ("synthesis for the ocean") by D. Stammer (next workshop, February 2006); on some work in CliC (Key), and about the SPARC WG on DA (Polavarapu) and GEWEX LDAS (Rossow). Flato (WGCM) summarized the limited research on coupled model DA. It is desirable to assemble an inventory of what is being done in the different projects and prepare a prospective view of how the projects can take advantage of the similar activities. **GSOP action should be commended and recommendations from GSOP transmitted to operational centres.**

DA Task group (Lorenc, chair; Key, Stammer, Simmons) is to write a short report on WCRP data assimilation. Specific recommendations are to:

- (i) Foster GSOP/CliC ocean and sea ice assimilation, to provide a contribution toward the IPY (especially with respect to ice thickness and other characteristics);
- (ii) Foster CliC, GEWEX and TOPC interactions on water cycle parameters including subgrid water surfaces (lakes), and address how to provide a focus on cryosphere parameters including snow cover and permafrost (possibility of a cryosphere assimilation workshop?);
- (iii) It is requested that the project representatives report back at the next meeting.

11. THORPEX and interactions between Thorpex and WCRP (Shukla, Chair of WCRP Modeling Panel)

Concern was expressed that any targeted or adaptive observation strategy may deteriorate the continuity of climate observations, and WOAP recommends maintaining the observing system for climate.

TFSP will be the focal point for WCRP/THORPEX interaction (next TFSP meeting August 22-24 in Trieste and one joint day with THORPEX). Some concerns were also expressed over the risks of duplication with WGNE. **Action: Shukla asked to represent WOAP concerns and interests in climate observations within the THORPEX scientific steering group.**

12. IPY opportunities (Key)

The period covers March 2007 to March 2009.

There is a need for enhancing observations in Northern Eurasia (R. Lawford)

Fight decline of observation network in polar regions. Plea for distribution of river run-off data.

Should we take advantage of IPY for other observation plans, for specific modelling studies?

Main WOAP actions to support IPY are under DA recommendations.

-WOAP will review IPY advances at its next meeting

13. Data management (DM) and stewardship, data recovery, archive

DM should be fundamental part of activity, not afterthought. WOAP examined several web sites of WCRP projects and sub-projects for DM policy and visibility. Ken Knapp (NCDC) described NCDC data activities.

Data management task group (**Koike**, Harrison, Rossow) **will look at different data policies (WGCM, CLIVAR (GSOP), CliC, CEOP, GEWEX, SPARC, GCOS, GEOSS) and suggest a policy for WCRP.** After final comments by projects, such a policy will be adopted (WOAP secretariat will help in the process).

WCRP and project websites were briefly examined during the meeting and will be more fully scrutinized and commented on. **The task group will review existing WCRP web structure and sites**, and make recommendations for WCRP-wide over-arching structure and site contents, looking also at intelligibility and accessibility of information. Several sites do not seem to explain acronyms or what their sub-projects are, for instance. The links to WCRP seem to be obsolete.

Obviously this should be a distributed activity, but one that can capitalize on developments elsewhere. The possibility of mirror sites should be considered. Should there be a common metadata strategy for WCRP?

Proposals should be prepared for next meeting.

14. Other future activities

Next formal meeting is not scheduled yet, waiting for JSC's response, assessment of funding available, and requests. In the meantime, the work will advance by e-mail exchanges and opportunistic subgroup meetings.

Presentations will be put on website with password **(this has been done since the meeting on the WCRP/COPES support unit website)**

In addition to topics mentioned above, future subjects for reflection include: how to sustain climate observation and activities, particularly as part of the GEO framework, how to contribute to the scientific coordination of IPY projects; The WDCs are not doing their job (especially oceans) and data management remains a concern.

The Chair thanked the hosts and made a presentation to Bill Rossow.

**WCRP Observations and Assimilation Panel (WOAP) Meeting
New York, 1-3 June 2005**

WOAP Agenda (30 May 2005)

Name in *bold italics* to lead discussion, other presenters in *italics*. Timings are indicative.

Task team leaders in bold are responsible for summarizing material in written report, as basis for future work plan.

Meeting Chair: ***Trenberth***

1 June 2005

08:00-09:00 Welcome with coffee and food

09:00-12:30

9:00 Opening, introductions: ***Trenberth*** (1)

9:10 WCRP COPES: ***Trenberth*** (2)

9:30 WOAP: JSC expectations for WOAP; Terms of Reference: ***Trenberth*** (3)

- ☐ Domains of responsibility, what is and is not within our purview, how it will be handled, and timetable
- ☐ Role of projects (Principles: main work done there, no interference, coordination where needed, integrating framework)
- ☐ Method of working (email)

10:00 GEO, GEOSS: ***Sommeria, Duchossois*** (4)

Issues, how to deal with GEO and make the most out of it?

WOAP as primary point of contact with GEOSS for WCRP

Communication of WCRP with satellite and other data agencies

10:30 Coffee break

11:30 GCOS: ***Manton, Harrison, Belward*** (5)

Issues for WOAP, how to ensure co-ordination without overlap.

Include also comments on GCOS participation in GEO.

12:30-13:30 Lunch

13:30-18:00

13:30 Reanalyses: ***Trenberth, Simmons, Stammer*** (6)

- ☐ Clearing-house
- ☐ Strategy for WCRP, coordination
- ☐ Promotion of reanalyses (letters?)
- ☐ Ongoing analyses, US proposal for testbed
- ☐ Datasets, access, archival
- ☐ Proposal for workshop
- ☐ Next International Conference?
- ☐ Task group with tentative workplan

15:00 Coffee break

15:30 Reprocessing and development of global climate products covering the last 30 years (using satellite and in-situ data) (7)

- ☐ Need: ***Trenberth, Rossow, GCOS rep., others***

(homework: projects to bring your examples and variables as well as argumentation for priority reprocessing)

- ☐ Examples, clouds, precipitation, radiation, water vapor, SST, surface fluxes, MSU (satellite) temperatures, NDVI, etc.
- ☐ GEWEX activities: *Rossow*
- ☐ Other projects, datasets
- ☐ Satellite Group proposal: ***Duchossois***
- ☐ Promotion, letters to agencies, funding issues
- ☐ Task group with workplan

17:00 Satellite observations/agencies: ***Rossow, Koike, Trenberth, Sommeria*** (8)
(related to reprocessing, also GCOS, above)

- ☐ Identifying gaps, uncertainties and opportunities for future observation systems (timeline 2010-2020). Report on NRC study
- ☐ Transitioning research to operational issues? *Harrison*
- ☐ Any task to be defined on this topic?

18:00 Adjourn

19:00 Reception kindly hosted by Bill

2 June 2005

08:30-12:30

08:30 CEOP: ***Koike*** (9)

- ☐ Phase 1, data collection, archival, analysis (?)
- ☐ Phase 2, scientific objectives, links to GEWEX
- ☐ Science plan: review
- ☐ Issues:
 - Need to keep momentum, funding
 - Need to make activity complementary, not duplicative and redundant
 - Need task group to take stock of CEOP and related other activities, make recommendations

10:30 Coffee break

11:00 CEOP follow-up and any item carried out from previous day

12:30-13:30 Lunch

13:30-18:00

13:30 Data assimilation (10)

(Homework: find out what is going on in your project)

- ☐ Atmosphere: WGNE: ***Lorenc, Simmons***
- ☐ Ocean: GSOP: *Stammer*
- ☐ Sea ice: CliC: *Key*
- ☐ Land: GEWEX, GLACE: *Rossow*
- ☐ Coupled: *Flato*
- ☐ Task group to assemble inventory of what is being done and prospects

15:00 Coffee break

15:30 Thorpex and interactions between Thorpex and WCRP (***Shukla***) (11)

Concerns over adaptive observations vs baseline climate obs in Thorpex? *Manton*

17:00 IPY opportunities (***Key***) (12)

18:00 Adjourn

3 June 2005

08:30-13:30

- 08:30 Data management and stewardship, data recovery, archive **(13)**
- ☐ What exists? (*Homework: examine your web site, find out about dm policy*)
 - ☐ CLIVAR, GSOP: data policy: *Stammer*
 - ☐ GEWEX: WGDMA: *Rossow*
 - ☐ CEOP: *Koike*
 - ☐ CliC: *Key*
 - ☐ SPARC: *Randel/ Polavarapu*
 - ☐ Model data: *Simmons, Flato*
 - ☐ How distributed, what level (overarching, vs embedded in projects)?
 - ☐ NOAA data policy (NCDC rep., *K. Knapp*)
 - ☐ Data access availability, experience from WMO, IPY, CLIVAR, GEOSS, GCOS: *Sommeria, GCOS, others*
 - ☐ Data policy for WCRP, what can be done, with letters?
 - ☐ Task group to take stock, contact projects, check web sites, make recommendations for WCRP-wide over-arching structures, web sites, etc
 - ☐ Data management plan (volunteer to lead it?)
- 10:30 Coffee break
- 11:00 Funding for WOAP activities, staffing: *Sommeria, Trenberth*
 Plan for next year, workshops
 Action items, timeline
 Next meeting
- 13:30 Adjourn

The afternoon is reserved for informal discussions and write-ups as necessary.

Possible Task Groups:

Goal, finite task, takes < week, report

1. Reprocessing: **Duchossois**, Rossow, Randel
2. Reanalyses: **Simmons**, Stammer, Flato
3. Data management: Harrison, Manton, **Koike**
4. CEOP: **Manton**, Belward, Kent, Rossow, Flato
5. Data assimilation: Key, Stammer, Simmons, **Lorenc**

Notes: Members are supposed to represent their projects or entities as well as possible. Hopefully we will have wireless access to the Internet and thus will be able to project web sites during the meeting. If your project web site is missing information, such as on data management policy, see if this can be corrected before our meeting. Note that there will be assignments arising from the meeting, but they should not be unduly burdensome.

List of participants to WOAP-1

Kevin Trenberth
J. Shukla (1-2 June only)
Jeffrey Key
Detlef Stammer
Saroja Polavarapu (for Bill Randel)
William Rossow
Greg Flato
Andrew Lorenc
Elizabeth Kent
Toshio Koike
Adrian Simmons
Guy Duchossois
Michael Manton
Ed Harrison
Alan Belward
Gilles Sommeria
Régis Juvanon du Vachat
Ken Knapp (NCDC)
Phil Arkin (U Md)
Rick Lawford (GEWEX Project Office)