

Hist. Geo Space. Sci. Discuss., referee comment RC1  
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## Comment on hgss-2021-16

Michael Rietveld (Referee)

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Referee comment on "History of EISCAT – Part 5: Operation and development of the system during the first 2 decades" by Gudmund Wannberg, Hist. Geo Space. Sci. Discuss., <https://doi.org/10.5194/hgss-2021-16-RC1>, 2021

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### General Comments

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This is an interesting and valuable paper on the History of EISCAT, complementing the other papers which describe more the science politics of building EISCAT. It gives an excellent overview of the technical and operational details of the radar systems, interspersed with personal comments on the social aspects as well. The paper is accurate as far as I can tell from my knowledge of the EISCAT systems and their history, but some largely minor errors, clarifications and details are mentioned below. The paper is very well written, with only a few language/spelling mistakes.

### Specific Comments

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Line 68: The reference here to "EISCAT Steering Committee, 1974" is presumably the same as "Hagfors et al. 1974" mentioned elsewhere and listed in the references. This reference should be unified.

Line 159-161: I suggest reversing the order of Finland and Sweden or of the institutes such that the nationalities are in the same respective order.

Line 194: It should read "Rietveld et al., 1993"

Line 196: As I recall, a site scientist in charge of the facility and two engineers were allocated. This was later reduced to the scientist and one engineer for economic reasons.

Line 289: Checked by "Statens Strålevern" (Norwegian Radiation Protection Authority), although UiT had responsibility for this.

Line 375: What is the DDT ? Since the abbreviation is not used elsewhere in the text it should be spelled out in full, Deputy Director Technical ?

It probably should be ADT which is introduced later, or all changed to DDT.

Line 382: 1986 should be 1996

Line 417: Since these reports almost certainly still exist in original format at various sites, I suggest

rewording to "They could be of great historical interest but ..."

Line 509: "46-m" ? Is it not 42-m ?

Line 520-521: I am not sure what is meant by the "harvest season". If it refers to a harvest of scientific publications, I would say that the earlier 1990s were most productive. The ESR probably produced its harvest of publications in the 2000s.

But around 2002 I would say the task was to look for a strategy for the future of the EISCAT radars, which is indeed another story.

I think this sentence needs further explanation.

Line 549: 3 MW was rarely possible in practice, mainly because of limitations in other parts of the system like the power combiner, waveguide joints, rotary joints (?) etc. 2 MW was more usual, or even less.

Line 785: For completeness it could also be mentioned that another station also started receiving the VHF transmissions successfully in 2012, namely the Finnish KAIRA observatory (McKay et al., 2015: "KAIRA: The Kilpisjärvi Atmospheric Imaging Receiver Array—System Overview and First Results" Derek McKay-Bukowski, Juha Vierinen, Ilkka I. Virtanen, Richard Fallows, Markku Postila, Thomas Ulich, Olaf Wucknitz, Michiel Brentjens, Nico Ebbendorf, Carl-Fredrik Enell, Marchel Gerbers, Teun Grit, Peter Gruppen, Antti Kero, Toivo Iinatti, Markku Lehtinen, Henri Meulman, Menno Norden, Mikko Orispää, Tero Raita, Jan Pieter de Reijer, Lassi Roininen, Arno Schoenmakers, Klaas Stuurwold, and Esa Turunen, IEEE TRANSACTIONS ON GEOSCIENCE AND REMOTE SENSING, VOL. 53, NO. 3, MARCH 2015)

Line 790: Since the abbreviation SPS is used a few lines down, it should be introduced in brackets here.

Line 935: It could be mentioned that in the late 1990s physically smaller tape formats (DAT and Exabyte) were used and when internet access was sufficiently fast transfers via the Net became standard.

Line 1083: Should this not read "late 1970s" ?

Line 1103: CP-1 is mentioned here for the first time (and CP-2), but the description of what they are is in the next paragraph. This should be fixed.

Line 1209: The abbreviation NPT could be introduced here, since it is used in the next paragraph.

#### Technical comments

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Line 93: Comma missing: "Bauer et al., 2012" and similar in many other references.

Line 94: "by where" should be "where"

Line 194: It should read "Rietveld et al., 1993"

Line 340: Spelling of "until"

Line 415: spelling of "review"

Line 516: "demolition" is better than "demolishing"

line 892: Spelling of "Receive"

Line 1346: The reference should be: "55, 4/5, 559-556, 1993"

Line 1358: The reference should be: "55, 4/5, 577-599, 1993."

Line 1370: Spelling of "CORrelator LANGuage"

ine 1372: The reference should be "55, 4/5, 543-557, 1993"

The formatting of the authors' initials in the references does not follow the style of HGSS. The initials of all authors should follow the respective names.