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GENERAL NOTICES
ALGEMENE KENNISGEWINGS

NOTICE 198 OF 2014

DEPARTMENT OF SCIENCE AND TECHNOLOGY

DECLARATION OF THE KAROO CENTRAL ASTRONOMY ADVANTAGE AREAS IN TERMS OF THE ASTRONOMY GEOGRAPHIC ADVANTAGE ACT, 2007.

I, Derek Hanekom, Minister of Science and Technology, hereby withdraw Notice No. 141 in Gazette No. 37397 published on 28 February 2014 and replace it with this notice in which I declare the areas indicated in the schedule hereto as the Karoo Central Astronomy Advantage Areas for the purpose of radio astronomy and related scientific endeavours in terms of section 9(1) and (2) of the Astronomy Geographic Advantage Act, 2007 (Act No.21 of 2007) ("the Act").

As provided for in the Act the declared astronomy advantage areas are to be protected, preserved and properly maintained in respect of radio frequency interference or interference in any other way. Protection for the areas is to be established through the making of regulations in terms of the Act.

The draft regulations will be subjected to the public participation processes prescribed in the Act and the Promotion of Administrative Justice Act (Act 3 of 2000). Draft regulations will be sent by registered post or a chosen preferred method for comment to persons in the permanent register of interested and affected parties for the Karoo Central Astronomy Advantage Areas whose existing rights may be directly affected by such regulations before the regulations are published in the Government Gazette.

The written and oral representations made during the public consultation process for this declaration will be considered together with any new submissions to be made when the draft regulations are published for public comment in so far as they relate to aspects included in the draft regulations. A person who has already made a written and/or an oral representation may submit further representations.

An addendum containing a summary of the report by Prof JCW van Rooyen SC to me is attached to this notice. The full version of the report, as accepted by me, is available at the Astronomy Management Authority within the Department of Science and Technology. To obtain a copy of the report please contact:

Mr Mere Kgampe
Tel: 012 843 66 44
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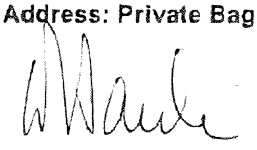

DEREK HANEKOM
MINISTER OF SCIENCE AND TECHNOLOGY

SCHEDULE

1. Definitions

In this notice any word or expression to which a meaning has been ascribed in the Act shall have the meaning so ascribed and, unless the context indicates otherwise:

"**Karoo Core Astronomy Advantage Area**" means the Karoo Core Astronomy Advantage Area declared in Notice No. 723 in Government Gazette No. 33462 on 20 August 2010;

"**Polygon**" means a closed plane figure bounded by straight lines; and

"**WGS 84**" means World Geodetic System dating from 1984 and last revised in 2004.

2. Scope of the declaration

This declaration applies to the Karoo Central Astronomy Advantage Areas described below which will be used for the purposes of radio astronomy and related scientific endeavours.

3. Description of the Karoo Central Astronomy Advantage Areas

(1) The Karoo Central Astronomy Advantage Areas (Figure 1) consist of three partly overlapping areas with common inner boundaries that coincide with the outer boundaries of the Karoo Core Astronomy Advantage Area. The three areas have different outer boundaries that depend on the applicable propagation conditions for the different frequency bands specified, and other practical considerations.

(2) The Karoo Central Astronomy Advantage Area 1 is the area between the boundaries of the Karoo Core Astronomy Advantage Area and outer boundaries in the form of a polygon for which the geographical coordinates according to the WGS 84 datum are provided in the table below. The area is limited to the boundaries of the Northern Cape Province and does not include any area where the polygon may extend across the provincial border. This area will apply to radio astronomy observations in the frequency band from 100 to 2 170 MHz.

Point references: Karoo Central Astronomy Advantage Area 1	Latitude (degrees South)	Longitude (degrees East)
A 1	29.3500	18.8100
B 1	28.7800	20.9900
C 1	28.9100	21.6000
D 1	29.5200	22.0500
E 1	30.5900	23.4300
F 1	31.9600	22.2200
G 1	32.3700	20.9800
H 1	30.4100	19.0000

(3) The Karoo Central Astronomy Advantage Area 2 is the area between the boundaries of the Karoo Core Astronomy Advantage Area and outer boundaries in the form of a polygon for which the geographical coordinates according to the WGS 84 datum are provided in the table below. This area will apply to radio astronomy observations in the frequency band from 2 170 to 6 000 MHz.

Point references: Karoo Central Astronomy Advantage Area 2	Latitude (degrees South)	Longitude (degrees East)
A 2	29.5100	19.6600
B 2	29.2200	21.6600
C 2	30.0800	22.7700
D 2	31.5100	22.6300
E 2	31.8200	20.6500
F 2	30.8100	19.5700

(4) The Karoo Central Astronomy Advantage Area 3 is the area between the boundaries of the Karoo Core Astronomy Advantage Area and outer boundaries in the form of a polygon for which the geographical coordinates according to the WGS 84 datum are provided in the table below. This area will apply to radio astronomy observations in the frequency band from 6 000 to 25 500 MHz.

Point references: Karoo Central Astronomy Advantage Area 3	Latitude (degrees South)	Longitude (degrees East)
A 3	29.7900	20.4900
B 3	29.3400	21.8100
C 3	30.0800	22.7600
D 3	31.0600	22.5400
E 3	31.3800	21.4200
F 3	30.6800	20.1000

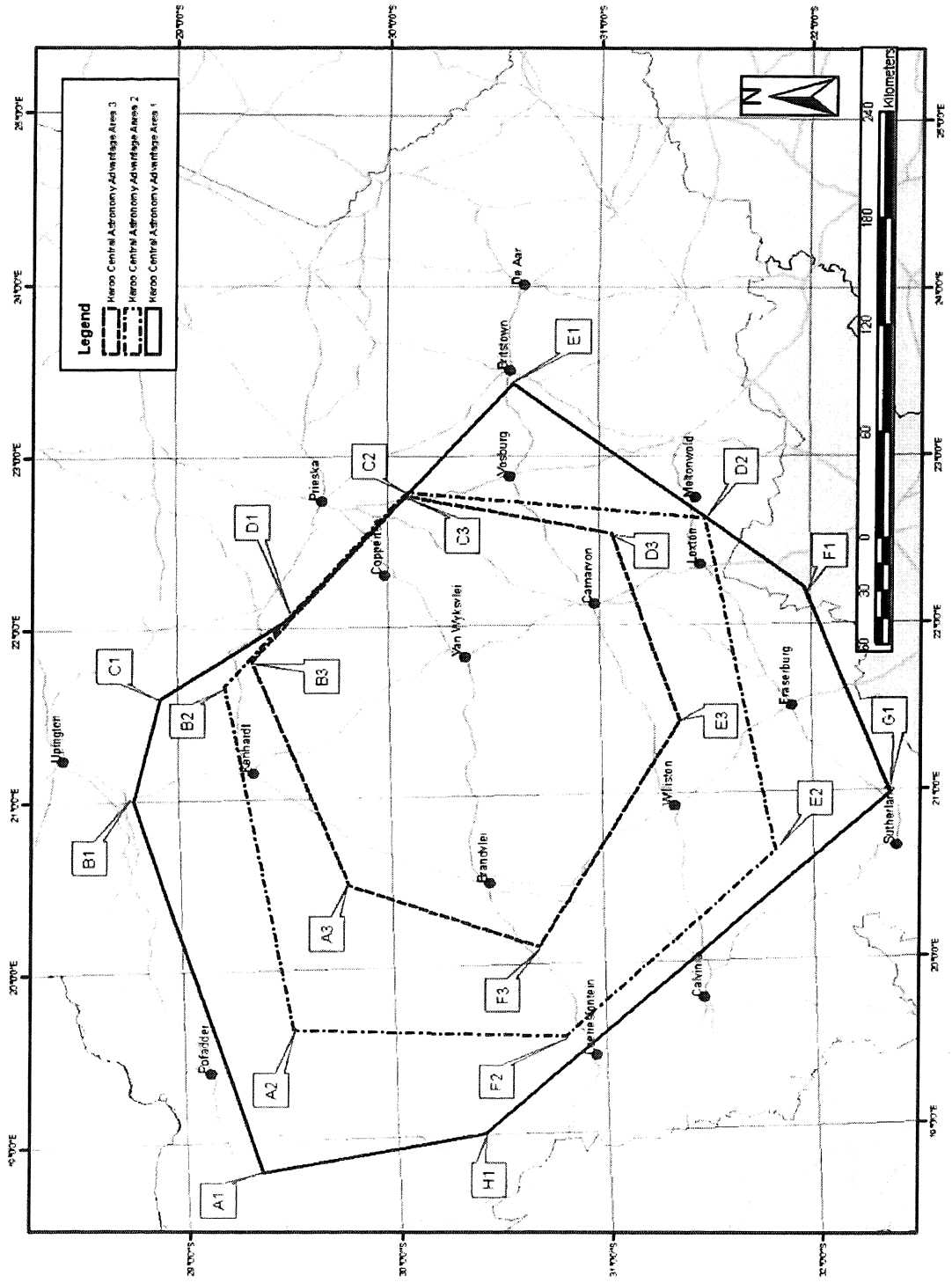

Figure 1: Karoo Central Astronomy Advantage Areas

KENNISGEWING 198 VAN 2014

DEPARTEMENT VAN WETENSKAP EN TEGNOLOGIE

VERKLARING VAN DIE KAROO SENTRALE ASTRONOMIEVOORDEELGEBIEDE KRAGTENS DIE WET OP GEOGRAFIESE ASTRONOMIEVOORDEEL, 2007.

Die Kennisgewing Nr. 141 in Staatskoerant Nr. 37397 op 28 February 2014 gepubliseer, word hiermee herroep en deur hierdie kennisgewing vervang. Kragtens artikel 9(1) en (2) van die Wet op Geografiese Astronomievoordeel, 2007 (Wet Nr. 21 van 2007) ("die Wet"), verklaar ek, Derek Hanekom, Minister van Wetenskap en Tegnologie, die gebiede aangedui in die skedule hierby ingesluit as die Karoo Sentrale Astronomievoordeelgebiede ten opsigte van radioastronomie en verwante wetenskaplike aktiwiteite.

Soos in die Wet bepaal, moet die verklaarde astronomievoordeelgebiede beskerm, bewaar en behoorlik in stand gehou word ten opsigte van radiofrekwensiesteuring of enige ander steuring. Beskerming van die gebiede sal daargestel word deur die maak van regulasies kragtens die Wet.

Die konsep regulasies sal onderworpe wees aan die openbare deelname prosesse wat in die Wet en die Wet op die Bevordering van Administratiewe Geregtigheid (Wet 3 van 2000) voorgeskryf is.

Die konsep regulasies sal per geregistreerde pos of 'n gekose voorkeur metode aan persone in die permanente register van belanghebbende en geaffekteerde persone vir die Karoo Sentrale Astronomievoordeelgebiede, wie se bestaande regte moontlik direk deur sulke regulasies geaffekteer mag word, versend word voordat die konsep regulasies in die Staatskoerant afgekondig word.

Die geskrewe en mondelinge vertoë wat tydens die openbare raadplegingsproses ten opsigte van hierdie verklaring gemaak is, sal oorweeg word vir sover dit verband hou met die konsepregulasies, tesame met enige nuwe vertoë wat gemaak mag word wanneer die konsepregulasies vir openbare kommentaar gepubliseer word. 'n Persoon wat alreeds geskrewe en/of mondelinge vertoë gemaak het, mag verdere vertoë rig.

'n Bylae met 'n opsomming van die verslag van Prof JCW van Rooyen SC aan my is by hierdie kennisgewing aangeheg. Die volle weergawe van die verslag, soos deur my aanvaar, is beskikbaar by die Astronomie Bestuursowerheid in die Departement van Wetenskap en Tegnologie. Om 'n afskrif daarvan te bekom, skakel asb. met:

Mnr Mere Kgampe
Tel: 012 843 66 44
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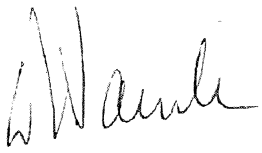

DEREK HANEKOM
MINISTER VAN WETENSKAP EN TEGNOLOGIE

SKEDULE

1. Definisies

Enige woord of uitdrukking in hierdie kennisgewing waaraan 'n betekenis in die Wet toegeken is, het die betekenis so toegeken tensy die konteks andersins aandui:

"**Karoo Kern Astronomievoordeelgebied**" beteken die Karoo Kern Astronomievoordeelgebied verklaar in Kennisgewing Nr. 723 in Staatskoerant Nr. 33462 op 20 Augustus 2010;

"**Veelhoek**" beteken 'n geslote plat figuur met reguit lyne verbind; en

"**WGS 84**" beteken die "World Geodetic System" in 1984 tot stand gebring en laas in 2004 gewysig is.

2. Trefwydte van die verklaring

Hierdie verklaring is van toepassing op die Karoo Sentrale Astronomievoordeelgebiede soos hieronder beskryf wat vir die doeleindes van radioastronomie en verwante wetenskaplike aktiwiteite gebruik sal word.

3. Beskrywing van die Karoo Sentrale Astronomievoordeelgebiede

(1) Die Karoo Sentrale Astronomievoordeelgebiede (Figuur 1) bestaan uit drie gedeeltelik oorvleuelende areas met gemeenskaplike binne grense wat ooreenstem met die buitegrense van die Karoo Kern Astronomievoordeelgebied. Die drie gebiede het verskillende buitegrense wat afhang van die toepaslike golfvoortplantingstoestande vir die verskillende frekwensiebande gespesifiseer en ander praktiese oorwegings.

(2) Die Karoo Sentrale Astronomievoordeelgebied 1 is die gebied tussen die grense van die Karoo Kern Astronomievoordeelgebied en buite grense in die vorm van 'n veelhoek waarvoor die geografiese koördinate volgens die WGS 84 gegewens in die tabel hieronder verstrek word. Die gebied is beperk tot die grense van die Noordkaap Provinsie by enige punt waar die veelhoek die grense van die provinsie mag oorskry. Die gebied is van toepassing op radioastronomie waarnemings in die frekwensieband van 100 tot 2 170 MHz.

Punt verwysings: Karoo Sentrale Astronomie-voordeelgebied 1	Breedtegraad (grade Suid)	Lengtegraad (grade Oos)
A 1	29.3500	18.8100
B 1	28.7800	20.9900
C 1	28.9100	21.6000
D 1	29.5200	22.0500
E 1	30.5900	23.4300
F 1	31.9600	22.2200
G 1	32.3700	20.9800
H 1	30.4100	19.0000

(3) Die Karoo Sentrale Astronomievoordeelgebied 2 is die gebied tussen die grense van die Karoo Kern Astronomievoordeelgebied en buite grense in die vorm van 'n veelhoek waarvoor die geografiese koördinate volgens die WGS 84 gegewens in die tabel hieronder verstrek word. Die gebied is van toepassing op radioastronomie waarnemings in die frekwensie band van 2170 tot 6 000 MHz.

Punt verwysings: Karoo Sentrale Astronomie-voordeelgebied 2	Breedtegraad (grade Suid)	Lengtegraad (grade Oos)
A 2	29.5100	19.6600
B 2	29.2200	21.6600
C 2	30.0800	22.7700
D 2	31.5100	22.6300
E 2	31.8200	20.6500
F 2	30.8100	19.5700

(4) Die Karoo Sentrale Astronomievoordeelgebied 3 is die gebied tussen die grense van die Karoo Kern Astronomievoordeelgebied en buite grense in die vorm van 'n veelhoek waarvoor die geografiese koördinate volgens die WGS 84 gegewens in die tabel hieronder verstrek word. Die gebied is van toepassing op radioastronomie waarnemings in die frekwensie band van 6000 tot 25500 MHz.

Punt verwysings: Karoo Sentrale Astronomie-voordeelgebied 3	Breedtegraad (grade Suid)	Lengtegraad (grade Oos)
A 3	29.7900	20.4900
B 3	29.3400	21.8100
C 3	30.0800	22.7600
D 3	31.0600	22.5400
E 3	31.3800	21.4200
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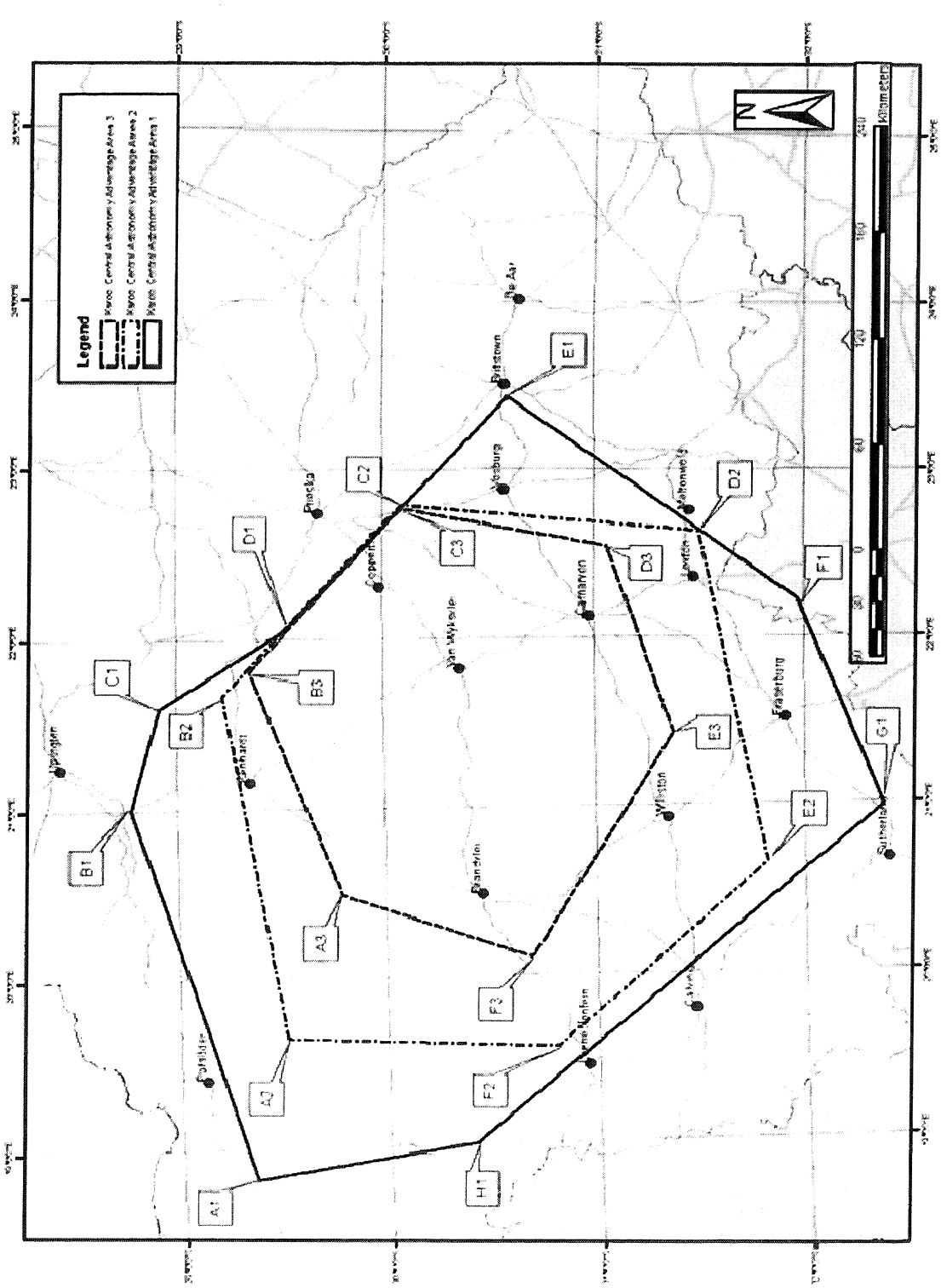

Figuur 1: Karoo Sentrale Astronomievoordeelgebiede

NOTICE 199 OF 2014

DEPARTMENT OF SCIENCE AND TECHNOLOGY

DECLARATION OF THE SUTHERLAND CENTRAL ASTRONOMY ADVANTAGE AREA IN TERMS OF THE ASTRONOMY GEOGRAPHIC ADVANTAGE ACT, 2007.

I, Derek Hanekom, Minister of Science and Technology, hereby withdraw Notice No. 140 in Gazette No. 37397 published on 28 February 2014 and replace it with this notice in which I declare the area indicated in the schedule hereto as the Sutherland Central Astronomy Advantage Area for the purpose of optical astronomy and related scientific endeavours in terms of section 9(1) and (2) of the Astronomy Geographic Advantage Act, 2007 (Act No.21 of 2007) ("the Act").

As provided for in the Act the declared astronomy advantage area is to be protected, preserved and properly maintained in respect of light pollution or interference in any other way. Protection for the area is to be established through the making of regulations in terms of the Act.

The draft regulations will be subjected to the public participation processes prescribed in the Act and the Promotion of Administrative Justice Act (Act 3 of 2000). Draft regulations will be sent by registered post or a chosen preferred method for comment to persons in the permanent register of interested and affected parties, for the Sutherland Central Astronomy Advantage Area whose existing rights may be directly affected by such regulations before the regulations are published in the Government Gazette.

The written and oral representations made during the public consultation process for this declaration will be considered together with any new submissions to be made when the draft regulations are published for public comment in so far as they relate to aspects included in the draft regulations. A person who has already made a written and/or an oral representation may submit further representations.

An addendum containing a summary of the report by Prof JCW van Rooyen SC to me is attached to this notice. The full version of the report, as accepted by me, is available at the Astronomy Management Authority within the Department of Science and Technology. To obtain a copy of the report please contact:

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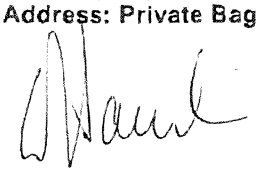

DEREK HANEKOM
MINISTER OF SCIENCE AND TECHNOLOGY

SCHEDULE

1. Definitions

In this notice any word or expression to which a meaning has been ascribed in the Act shall have the meaning so ascribed and, unless the context indicates otherwise:
"**Annulus**" means a space contained between the circumferences of two circles, one within the other; and

"**Sutherland Core Astronomy Advantage Area**" means the Sutherland Core Astronomy Advantage Area declared in Notice No. 723 in Government Gazette No. 33462 on 20 August 2010.

2. Scope of the declarations

This declaration applies to the central astronomy advantage area surrounding the Sutherland Core Astronomy Advantage Area of the Southern African Large Telescope (SALT) that will be used for the purposes of optical astronomy and related scientific endeavours.

3. Description of the Sutherland Central Astronomy Advantage Area

The Sutherland Central Astronomy Advantage Area (Figure 1) consists of all land in the Northern Cape Province within an annulus of inner radius 3 kilometres and outer radius 75 kilometres centred on the dome of the Southern African Large Telescope (SALT) located at 32° 22' 33" S and 20° 48' 38" E.

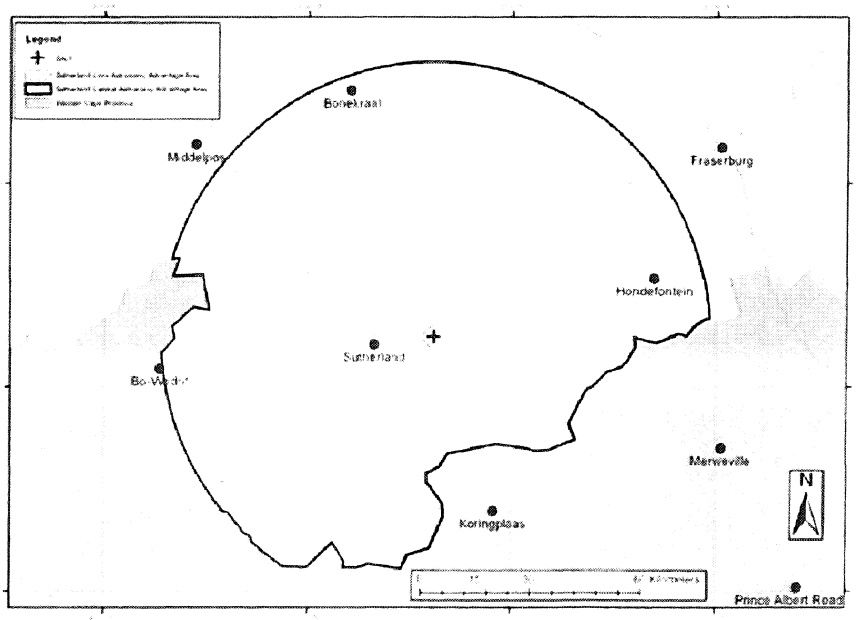

Figure 1: Sutherland Central Astronomy Advantage Area

KENNISGEWING 199 VAN 2014

DEPARTEMENT VAN WETENSKAP EN TEGNOLOGIE

VERKLARING VAN DIE SUTHERLAND SENTRALE ASTRONOMIEVOORDEELGEBIED KRAGTENS DIE WET OP GEOGRAFIESE ASTRONOMIEVOORDEEL, 2007.

Die Kennisgewing Nr. 140 in Staatskoerant Nr. 37397 op 28 February 2014 gepubliseer, word hiermee herroep en deur hierdie kennisgewing vervang. Kragtens artikel 9(1) en (2) van die Wet op Geografiese Astronomievoordeel, 2007 (Wet Nr. 21 van 2007) ("die Wet"), verklaar ek, Derek Hanekom, Minister van Wetenskap en Tegnologie, die gebied aangedui in die skedule hierby ingesluit as die Sutherland Sentrale Astronomievoordeelgebied ten opsigte van optiese astronomie- en verwante wetenskaplike aktiwiteite.

Soos in die Wet bepaal word, moet verklaarde astronomievoordeelgebiede beskerm, bewaar en behoorlik in stand gehou word ten opsigte van ligbesoedeling of enige ander steuring. Beskerming van die gebied sal daargestel word deur die maak van regulasies kragtens die Wet.

Die konsep regulasies sal onderworpe wees aan die openbare deelname prosesse wat in die Wet en die Wet op die Bevordering van Administratiewe Geregtigheid (Wet 3 van 2000) voorgeskryf is.

Die konsep regulasies sal per geregistreerde pos of 'n gekose voorkeur metode aan persone in die permanente register van belanghebbende en geaffekteerde persone vir die Sutherland Sentrale Astronomievoordeelgebied, wie se bestaande regte moontlik direk deur sulke regulasies geaffekteer mag word, versend word voordat die konsep regulasies in die Staatskoerant afgekondig word.

Die geskrewe en mondelinge vertoë wat tydens die openbare raadplegingsproses ten opsigte van hierdie verklaring gemaak is, sal oorweeg word vir sover dit verband hou met die konsepregulasies, tesame met enige nuwe vertoë wat gemaak mag word wanneer die konsepregulasies vir openbare kommentaar gepubliseer word. 'n Persoon wat alreeds geskrewe en/of mondelinge vertoë gemaak het, mag verdere vertoë rig.

'n Bylae met 'n opsomming van die verslag van Prof JCW van Rooyen SC aan my is by hierdie kennisgewing aangeheg. Die volle weergawe van die verslag, soos deur my aanvaar, is beskikbaar by die Astronomie Bestuursowerheid in die Departement van Wetenskap en Tegnologie. Om 'n afskrif daarvan te bekom, skakel asb. met:

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Sel: 076 488 4776
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DEREK HANEKOM
MINISTER VAN WETENSKAP EN TEGNOLOGIE

SKEDULE

1. Definisies

Enige woord of uitdrukking in hierdie kennisgewing waaraan 'n betekenis in die Wet toegeken is, het die betekenis so toegeken tensy die konteks andersins aandui:

"Annulus" is die area tussen twee sirkels met verskillende strale waar die een sirkel binne die ander lê; en

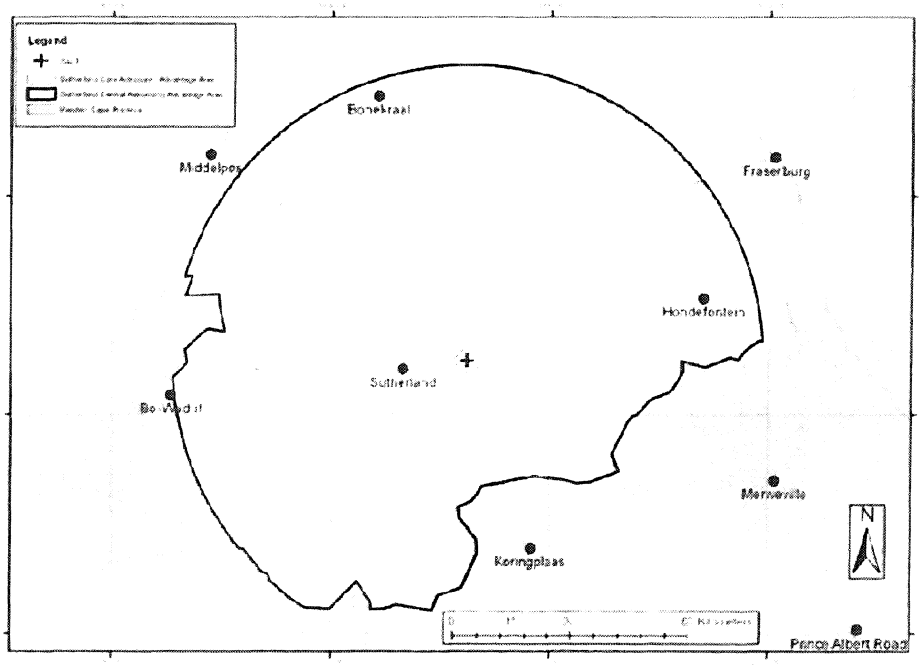
"Sutherland Kern Astronomievoordeelgebied" beteken die Sutherland Kern Astronomievoordeelgebied verklaar in Kennisgewing Nr. 723 in Staatskoerant Nr. 33462 op 20 Augustus 2010.

2. Trefwydte van die verklaring

Hierdie verklaring is van toepassing op die sentrale astronomievoordeelgebied rondom die Sutherland Kern Astronomievoordeelgebied van die Suider-Afrikaanse Groot Teleskoop (SALT) wat vir die doeleindes van optiese astronomie en verwante wetenskaplike aktiwiteite gebruik sal word.

3. Beskrywing van die Sutherland Sentrale Astronomievoordeelgebied

Die Sutherland Sentrale Astronomievoordeelgebied (Figuur 1) bestaan uit die hele grondgebied binne die Noordkaap Provinsie en binne 'n annulus met 'n binne straal van 3 km en 'n buite straal van 75 kilometer, beide gesentreer op die koepel van die Suider-Afrikaanse Groot Teleskoop (SALT) geleë op 32° 22' 33" S en 20° 48' 38' E.



Figuur 1: Sutherland Sentrale Astronomievoordeelgebied

Declaration of Central Astronomy Advantage Areas

Astronomy Geographic Advantage Act 2007

SUMMARY OF REPORT BY PROF JCW VAN ROOYEN SC

AS ACCEPTED BY

THE MINISTER OF SCIENCE AND TECHNOLOGY

THE HONOURABLE DEREK HANEKOM MP

2014

SUMMARY OF THE ADVICE TO THE MINISTER

[1] The undersigned was appointed by the Minister of Science and Technology in terms of the Astronomy Geographic Advantage Act 21 of 2007 ("AGA Act") to conduct public hearings at Carnarvon and Sutherland so as to establish what the opinions of stakeholders are in regard to the proposed declaration of Central Astronomy Advantage Areas ("Central AAA's") and to provide him with advice as to the justifiability for the declarations.

The full report is available at the Director: Astronomy Management Authority, Department of Science and Technology, Pretoria.

The Report was accepted by the Minister who decided to act in the light thereof.

[2] A *Central Astronomy Advantage Area* (Central AAA) is an area declared by the Minister so that activities, which may affect astronomy and related scientific endeavours, or astronomy advantage, such as light pollution or radio frequency interference, may be restricted or prohibited in the Central AAA to ensure or facilitate the protection of a *Core Astronomy Advantage Area* (Core AAA) from such activities. Two *Core* AAA's have already been declared by the Minister.

[3] I will, further on in this Summary, deal with the extent to which the rights of owners and other inhabitants in the Central AAA's would have to be balanced against the preservation, inter alia, of high atmospheric transparency, low levels of light pollution and minimal radio frequency interference. Some limitations will give rise to obligations for redress in so far as the State has Constitutional obligations in this regard. However, before that stage is reached, alternative solutions should be sought in terms of the AGA Act. Rationality and absence of arbitrarily imposed limitations should lie at the heart of the balancing process.

[4] It was contended that the declaration should not take place, since an environmental study had not been undertaken. And that even if, strictly speaking, the National Environment Management Act 1998 ("NEMA") was not applicable to the declaration of the Central AAA's, an environmental inquiry would have increased the Minister's knowledge concerning electronic communications and electricity generation problems that are likely to be experienced by owners and other lawful occupiers of the areas.

[5] The solution concerning the use of the airwaves does not lie in a NEMA investigation. The airwaves, including the electromagnetic field involved in

radio communications, within the context of modern technology, is primarily a field for technological inquiry and development.

[6] No one has argued that the *Core* AAA's, which have already been declared, do not fit into the categories as prescribed for these areas. When weighing the right to scientific research in section 16 of the Constitution of the Republic against relevant limitations, the scientific value of the SKA and the SAAO projects wins the day. Especially when it is considered that most, if not all, problems in the airwaves field involved in electronic communications, as well as most other limitations, are likely to be addressed technologically, and, if not immediately then within the reasonably foreseeable future.

[7] Even if, for purposes hereof, ownership of the space above one's property is accepted, as argued, there is no doubt that the space above one's property may be regulated by the State. The same argument applies to the earth under one's property, as recently confirmed by the Constitutional Court. Of course, interventions are not permitted to be arbitrary, as would appear from recent Supreme Court of Appeal authority. In so far as expropriation is concerned, the mere fact of *deprivation* by the State does not necessarily amount to *expropriation* according to the Constitutional Court.

[8] It was argued that the AGA Act does not make sufficient provision for consultation with the public in the affected areas. Special reference was made to the accent placed on consultation by the Constitutional Court in a matter which related to the Mineral and Petroleum Resources Development Act, 2002. Whilst this authority is instructive, and clearly demonstrates the value of consultation, the AGA Act provides for its own particular form of consultation. Sufficient steps, which are well documented, were taken to consult with the public. Once the draft regulations concerning certain limitations are published, an opportunity for public participation will, once again, be arranged.

[9] Generally it was, however, clear that uncertainty existed as to what the future held in for interested parties in the light of the protection which the Act provides to the Core AAA's against interference, amongst others, within the field of airwaves, the use of planes, mining, and electromagnetic interference generation in the Central AAA's. Concerns were also raised as to whether mechanical, industrial and agricultural development would not be stifled by the limitations.

[10] Uncertainty and even discontent of residents about the impact of the future Regulations is understandable. The current step of declaring areas

as *Central AAA's* does not automatically involve the imposition of restrictions. A further, far more scientifically orientated public participation process will be carried out after draft regulatory restrictions are published. It should be borne in mind, once again, that restrictions are not permitted to be arbitrary. They must, in law, be constitutionally rational. Furthermore, there is a strong likelihood that alternative means of electronic communications and techniques to deal with electro-magnetic interference will be developed, which will not adversely affect the operation of the SKA and SAAO, and which are likely to improve the quality of the life and business of farmers and other inhabitants of the Central AAA's. In fact, the SKA has been identified as one of eighteen Special Infrastructure Projects by the Presidential Infrastructure Coordination Commission.

[11] Although interested parties must not be overly optimistic, compensation for losses, where permitted by the Constitution, will follow. As stated earlier, deprivation does not, in itself, amount to expropriation. Cost increases will, in the ordinary course, therefore, not automatically be subsidised. Even without the AGA Act limitations, cost increases for individuals would have been inevitable in order to address existing communication problems.

[12] In so far as aviation is concerned, section 21 of the AGA Act provides that the Minister may, with the concurrence of the Civil Aviation Authority by notice in the *Gazette*, prohibit or restrict the over-flight by any aircraft of any Core or Central AAA, or impose conditions on any such over-flight. Such restrictions may be made in regard to airspace up to 18,500 metres above the highest point in the area, or any greater height that the Minister may declare. Further reasonable restrictions may be prescribed. The above authority to limit aircraft may only be made with the concurrence of the Ministers responsible for Transport and Defence. A public participation process must be conducted.

[13] In so far as limitation on electricity generation is concerned, the potential restriction of 2,000 Watt mentioned earlier in an Explanatory Memorandum has been raised to 10,000 Watt. Above that, permits will be required, however this intended limitation is still subject to a public participation process.

[14] Submissions from Sutherland farmers state that their objectives are to develop their properties to maximum profitability for owners and workers by making use of modern technologies, including state-of-the-art telecommunications, electricity generation through solar and wind, and the

use of electrical equipment for farming activities. It is argued that it seems that the declarations and the ensuing implications may jeopardise their objectives. None of the stated objectives on the intended use of technologies would have an adverse impact on *optical* astronomy that would be protected in the Sutherland Central AAA.

[15] It was contended that the declaration of the Sutherland Central AAA for optical astronomy purposes will affect wind farm development. This is a matter which should be left over for evidence and discussion at the public participation regarding the draft regulations, which are due to be published in 2014. Nevertheless, the priority should be to accommodate, if necessary with reasonable restrictions, these economically vibrant activities.

[16] A representative from the Alkantpan Weapons testing range informed me that Alkantpan belongs to Armscor. The size of the area is about 86 000 hectare and it is about 80km (as the crow flies) from the declared Karoo *Core* AAA. Their main business is the testing of ballistic weapon systems. The testing range is not prohibitive of the declaration since it is a matter permitted by section 23 of the AGA Act to be addressed *after* the declaration of the Karoo Central AAA's.

CONCLUSION

1. That since the required procedures were complied with and no legal ground could be found not to declare the Central AAA's as defined: that the Minister declare the Karoo Central AAA's 1 to 3 for radio astronomy and related scientific endeavours and the Sutherland Central AAA for optical astronomy and related scientific endeavours in the *Government Gazette*.

2. That an investigation in terms of the NEMA is not, in law, a requirement for these declarations. The airwaves involved in radio communications and the electromagnetic field relating to electrical activities, within the context of modern technology, is primarily a field for technological inquiry and development.

3. That the Minister is legally entitled to impose restrictions on the use of the airwaves and the electro-magnetic emissions as well as other relevant restrictions, subject to those restrictions having been subjected to a public participation process and the restrictions are rational and not imposed arbitrarily.

4. That when weighing the right to scientific research as guaranteed in section 16 of the Constitution against rational limitations in electronic communications and the electro-magnetic field as well as other relevant

fields, the scientific research potential of the SKA and the SAAO wins the day.

5. That it is important that draft regulations be published as soon as possible after the declaration of the Central AAA's, so that the interested parties may study them. This will address the concern of some members of the areas involved that they are in the dark as to the future. I am informed by the Director that the regulations have been drafted for the Karoo Central AAA's and are, subject to obtaining concurrence from ICASA, ready to be published for comment and, ultimately, be subjected to public participation in terms of section 42 of the AGA Act. The draft regulations are:

(a) Regulations to prohibit and restrict the use of certain radio spectrum and certain radio transmission activities in the Karoo Central AAA's declared for radio astronomy purposes;
(b) Regulations restricting electromagnetic interference in the Karoo Central AAA1; and
(c) Regulations on procedural and related matters for Central AAA's declared for radio astronomy purposes.

6.That it will, with respect, be important for the Minister to not approach matters from a prohibitive angle, but rather to impose reasonable restrictions which are absolutely necessary and, accordingly, would ultimately serve the public interest by avoiding economic stagnation and keeping enterprises in the areas vibrant, in the interest of economic growth. Obviously, when there is no other choice, prohibitive measures will have to be included.

7. That the situation at *Alkantpan* be investigated by the Astronomy Management Authority with a report to the Minister as soon as possible.

8. That there is no reason why the declaration of the Karoo Central AAA's must be postponed until the matter of *Alkantpan* is resolved.

9.That presently there are not sufficient grounds to initiate an inquiry in terms of section 23 into the mining and prospecting operations referred to in the submissions. If, in time, the Minister on good cause decides to do so, the review set out in the relevant section 23(2) would have to be undertaken. Radio communications and electromagnetic emissions would, of course, be subject to compliance with the regulations to be published after public participation in terms of section 42 of the AGA Act.

J. C. W. van Rooyen

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JCW VAN ROOYEN SC **18 December 2013**

VERKLARING VAN SENTRALE ASTRONOMIEVOORDEELGEBIEDE

WET OP GEOGRAFIESE ASTRONOMIEVOORDEEL 2007

OPSOMMING VAN DIE VERSLAG DEUR PROF JCW VAN ROOYEN SC

SOOS AANVAAR DEUR

DIE MINISTER VAN WETENSKAP EN TEGNOLOGIE

DIE AGBARE DEREK HANEKOM LP

2014

OPSOMMING VAN DIE ADVIES AAN DIE MINISTER

[1] Ondergetekende is deur die Minister van Wetenskap en Tegnologie kragtens die Wet op die Geografiese Astronomievoordeel, Wet 21 van 2007("GA WET"), aangestel om openbare verhore in November 2013 te Carnarvon en Sutherland te hou ten einde vas te stel wat die menings van belanghebbendes is in verband met die voorgestelde verklarings van Sentrale Astronomievoordeelgebiede en om die Minister te adviseer met betrekking tot die juridiese regverdiging vir die verklarings.
Die volledige verslag is beskikbaar by die Direkteur: Astronomie Bestuursgesag, Departement van Wetenskap en Tegnologie, Pretoria.
Die Verslag en die Aanbevelings in die volledige verslag is deur die Minister goedgekeur. Hy het besluit om dienooreenkomstig op te tree.

[2] 'n *Sentrale Astronomievoordeelgebied* (Sentrale AVG) mag slegs deur die Minister verklaar word sodat aktiwiteite wat 'n invloed kan hê op astronomie- en verwante wetenskaplike ondernemings, of astronomievoordeel, soos ligbesoedeling of radiofrekwensiesteuring, beperk of verbied kan word in die gebiede om die beskerming van 'n *Kern Astronomievoordeelgebied* (Kern AVG) teen sodanige aktiwiteite te bevorder. Twee Kern AVG's is reeds deur die Minister verklaar.

[3] Ek sal hieronder aandag gee aan die mate waarin die belange van eienaars en ander belanghebbendes in die Sentrale AVG's gebalanseer sal moet word teen die beskerming, onder andere, van hoë atmosferiese helderheid, lae vlakke van ligbesoedeling en minimale radiofrekwensiesteuring. Sommige beperkings sal aanleiding gee tot `n grondwetlike plig tot vergoeding. Voordat daardie stadium egter bereik word, sal alternatiewe oplossings kragtens die GA Wet eers gesoek moet word.

[4] Dit is aangevoer dat die verklarings nie mag plaasvind voordat daar nie `n ondersoek ingevolge die Wet op Nasionale Omgewingsbestuur 1998 ingestel is nie. En, selfs as daar geen verpligting in dié verband was nie, so `n ondersoek sou bygedra het tot die kennis van die Minister in verband met elektroniese kommunikasie en elektriese kragopwekking probleme wat eienaars en ander belanghebbendes sou kon ondervind.

[5]Die oplossing van probleme in verband met elektroniese kommunikasie is nie geleë in `n ondersoek kragtens die omgewingswetgewing nie. Radiogolwe, wat die elektromagnetiese veld insluit, is wesentlik `n ondersoekveld binne die

moderne tegnologiese veld. Die moderne tegnologiese potensiaal binne hierdie veld is, gelukkig, wesentlik.

[6] Niemand het aangevoer dat die verklaring van die *Kern AVG's* nie geregverdig was nie. Wanneer die grondwetlike reg tot wetenskaplike navorsing opgeweeg word teen die toepaslike beperkings op die belange van individue, weeg die eerste reg swaarder. In dié verband is dit egter van belang dat die meeste probleme, indien nie alle probleme nie, betrokke in golfvoortplanting vir elektroniese kommunikasie, sowel as die meeste ander beperkings, waarskynlik binne die redelik voorsienbare toekoms tegnologies opgelos sal kan word, indien nie onmiddellik nie.

[7] Selfs indien dit, soos betoog, aanvaar word dat die lugruim bokant `n eiendom aan die eienaar van die grond behoort, is daar geen twyfel dat die vermelde ruimte deur die Staat gereguleer mag word nie. Dieselfde argument geld ten aansien van die grond onder die eiendom, soos onlangs deur die Grondwethof beslis is. Dit spreek egter vanself dat beperkings wat deur die Staat opgelê word nie arbitrêr opgelê mag word nie, soos blyk uit `n onlangse uitspraak van die Hoogste Hof van Appèl. Vir sover dit onteiening betref moet in ag geneem word dat blote ontneming nie noodwendig neerkom op onteiening nie – weer eens kragtens onlangse Grondwethof gesag.

[8] Dit is aangevoer dat die GA Wet nie afdoende voorsiening maak vir konsultasie met belanghebbendes nie. Daar is verwys na onlangse Grondwethof gesag in verband met die Minerale en Petroleum Bronne Wet 2002, waar besondere klem geplaas is op raadpleging met die publiek. Terwyl die vermelde gesag insiggewend is en duidelik die waarde van raadpleging beklemtoon, maak die GA Wet self ook voorsiening vir sy eie vorm van konsultasie. Ek is daarvan oortuig dat afdoende stappe, wat goed gedokumenteer is, geneem is om met die belanghebbende partye te raadpleeg.

[9] Oor die algemeen was dit egter duidelik dat onsekerheid onder belanghebbendes bestaan met betrekking tot wat die Wetgewing vir hulle inhou in die lig van die beskerming wat die Wet aan die Kern AVG's verleen teen versteuring, onder andere, op die gebiede van radiogolwe, die gebruik van vliegtuie, mynbou en elektromagnetiese steuring wat in die Sentrale AVG's ontstaan. Kommer is ook uitgespreek of meganiese, nywerheids- en landbouontwikkeling nie in die wiele gery sal word deur die beperkings nie.

[10] Onsekerheid en kommer by belanghebbendes ten aansien van toekomstige beperkings is verstaanbaar. Die huidige verklaring van gebiede tot Sentrale AVG's hou egter nie vanself beperkings in nie. `n Latere, veel meer wetenskaplik georiënteerde openbare ondersoek sal egter plaasvind sodra die konsepregulasies gepubliseer word. Hier moet weer eens gemeld word dat beperkings nie op `n arbitrêre basis opgelê mag word nie. Alle beperkings moet grondwetlik rasioneel wees. In elk geval is dit waarskynlik dat alternatiewe metodes in die voorsienbare toekoms ontwikkel sal word ten einde steuring deur elektroniese kommunikasie, elektromagnetiese uitstraling en ander probleme te ondervang, sonder om die SKA en die SAAO te affekteer. Die ontwikkeling sal ook die lewenskwaliteit en sake-vooruitsigte van die belanghebbendes verbeter. Dit is dan ook van besondere belang dat die SKA deur die Presidensiële Infrastruktuur Koördinasiekomitee tot een van agtien Spesiale Infrastruktuur Projekte verklaar is.

[11] Alhoewel belanghebbendes nie oormatig optimisties moet wees nie, sal vergoeding, vir sover dit deur die Grondwet gemagtig word, volg. Soos reeds vermeld, kom blote ontneming nie noodwendig op onteiening neer nie. Toename in koste sal dus nie in die gewone loop van sake gesubsidieer word nie. Selfs sonder die beperkings waartoe die GA Wet lei, sou koste verhogings om bestaande kommunikasie probleme aan te spreek, vir belanghebbendes onafwendbaar gewees het.

[12] Vir sover dit lugvaart betref, bepaal art 21 van die GA Wet dat die Minister, met die instemming van die Siviele Lugvaartowerheid, by wyse van kennisgewing in die Staatskoerant, die oorvlug van enige vliegtuie oor enige Kern of Sentrale AVG mag verbied. Sodanige beperkings mag ingestel word tot `n hoogte van 18 500 meter bokant die hoogste punt in `n gebied of enige grotere hoogte soos deur die Minister bepaal. Verdere redelike beperkings mag ook opgelê word. Die vermelde bevoegdheid mag alleen met die instemming van die Ministers verantwoordelik vir Vervoer en Verdediging uitgeoefen word. `n Openbare deelname proses moet ook onderneem word.

[13] Vir sover dit die beperking op elektrisiteitsopwekking betref, is die potensiële beperking van 2,000 Watt soos in `n Memorandum vermeld, opgeskuif na 10,000 Watt. Bokant dit, sal `n permit verkry moet word. Die beoogde beperking is nog aan 'n openbare deelname proses onderworpe.

[14] Vertoë van dertien boere in die Sutherland distrik en die plaaslike landbou-unie dui daarop dat hulle hul eiendomme wil ontwikkel tot

maksimum winsgewende eenhede deur gebruik te maak van modern tegnologie, insluitende hoogs gesofistikeerde kommunikasiemiddels, elektriese opwekking deur son en windkrag en die gebruik van elektriese toerusting in hul boerdery-bedryf. Dit word aangevoer dat dit wil voorkom dat die beperkinge wat die GA Wet magtig hul oogmerke in die wiele sal ry.
Geeneen van die doelwitte sal egter deur die optiese astronomie oogmerke in die Sutherland Sentrale AVG geaffekteer word nie, behalwe miskien vir sover dit lugvaart waarskuwingsligte betref.

[15] Dit is aangevoer dat die verklaring van die Sutherland Sentrale AVG die ontwikkeling van die opwekking van elektriese krag deur sogenaamde windplase sal affekteer. My advies is dat die aangeleentheid oorgelaat moet word vir getuienis en bespreking tydens die openbare konsultasie proses wat sal volg op die publikasie van die konsep-regulasies gedurende 2014. Op `n voorlopige basis, moet egter opgemerk word dat radio frekwensiesteuring met betrekking tot radioastronomie sou kon volg as gevolg van wind turbines wat radiogolwe weerkaats. Nietemin, `n prioriteit behoort te wees om, waar nodig met redelike beperkings, nie hierdie ekonomies lewensvatbare bedrywe lam te lê nie.

[16] `n Verteenwoordiger van die Wapen Toetsterrein by Alkantpan, het my ingelig dat die terrein aan Krygkor behoort. Die oppervlakte van die gebied is ongeveer 86 000 hektaar en dit is (soos die voël vlieg) 80km van die Karoo Kern AVG. Hul hoof aktiwiteit is die toets van ballistiese wapensisteme.
Die toetsterrein lê nie die verklaring van die Karoo Sentrale AVG's lam nie. Dit is `n aangeleentheid wat ondervang word deur art 23 van die GA Wet en sal aangespreek mag word *na* die verklaring van die Karoo Sentrale AVG's.

GEVOLGTREKKING

1. Dat aangesien die voorgeskrewe prosedures nagekom is en geen regsgrond gevind kon word om nie die Sentrale AVG's aldus te verklaar nie: dat die Minister die Karoo Sentrale AVG's 1 tot 3 vir radio-astronomie en verwante wetenskaplike ondernemings en die Sutherland Sentrale AVG vir optiese astronomie en verwante wetenskaplike ondernemings in die *Staatskoerant* verklaar.

2. Dat `n ondersoek kragtens die Wet op Nasionale Omgewingsbestuur nie vereis word nie. Die radiogolwe wat geraak word deur radio kommunikasie en die elektromagnetiese veld wat betrekking het op elektriese aktiwiteite, is primêr `n gebied vir tegnologiese ondersoek en ontwikkeling.

3. Dat die Minister wetlik gemagtig is om beperkings in te stel op die gebruik van radiogolwe, elektromagnetiese uitstralings sowel as ander relevante beperkings. Sodanige beperkings moet onderwerp word aan `n openbare raadplegingsproses en moet altyd rasioneel wees en dus nie op arbitrêre gronde ingestel word nie.

4. Dat wanneer die reg op wetenskaplike navorsing, soos gewaarborg in art 16 van die Grondwet, opgeweeg word teen rasionele beperkings op die gebruik van radiogolwe, elektromagnetiese uitstralings sowel as ander relevante beperkings, die wetenskaplike navorsingspotensiaal van die SKA en die SAAO, swaarder weeg.

5. Dat dit belangrik is dat hierdie konsepregulasies so gou moontlik na die verklaring van die Sentrale AVG's gepubliseer moet word sodat belanghebbendes dit kan bestudeer. Dit sal die kommer van belanghebbendes aanspreek dat hulle in die duister is vir sover dit die toekoms betref. Die Direkteur het my ingelig dat die konsepregulasies vir die Karoo Sentrale AVG's gereed is en, onderworpe aan ondersteuning deur die Onafhanklike Kommunikasie Owerheid van Suid-Afrika, gereed is vir publikasie vir kommentaar en uiteindelik vir bespreking gedurende `n openbare deelname proses kragtens art 42 van die GA Wet. Die konsepregulasies is die volgende:

(a) Regulasies ten einde die gebruik van sekere radio spektrum en sekere radio transmissie aktiwiteite te verbied of te beperk in die Karoo Sentrale AVG's wat vir doeleindes van radio astronomie verklaar is;

(b) Regulasies wat elektromagnetiese steuring in die Karoo Sentrale AVG1 beperk;

(c) Regulasies ten aansien van prosedures en verwante aangeleenthede vir Sentrale AVG's wat verklaar is vir radio-astronomie doeleindes.

6. Dat dit, met eerbied, belangrik sal wees vir die Minister om nie aangeleenthede vanuit `n verbiedende hoek te benader nie, maar om eerder redelike beperkings in te stel wat absoluut noodsaaklik is. So sal die openbare belang uiteindelik gedien word en ondernemings in die gebiede lewendig gehou word in die belang van ekonomiese groei. Noodwendig, waar daar geen ander keuse is nie, sal verbiedende maatreëls ingestel moet word.

7. Dat die situasie by Alkantpan ondersoek moet word deur die Astronomie Bestuursgesag met `n verslag aan die Minister so gou as moontlik.

8. Dat daar geen rede is waarom die verklaring van die Karoo Sentrale AVG's uitgestel moet word tot die aangeleentheid van Alkantpan opgelos is nie.

9. Dat daar nie tans afdoende gronde is vir `n ondersoek kragtens artikel 23 met betrekking tot die mynbou en prospektering waarna verwys is in die vertoë nie. Indien die Minister, op `n latere stadium op goeie gronde besluit om dit te doen, sal `n art 23(2) ondersoek onderneem moet word. Radiokommunikasie en elektromagnetiese uitstralings sal, nietemin, onderworpe wees aan regulasies, wat na `n openbare deelname proses, toepaslik sal wees.

J. C. W. van Rooyen

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JCW VAN ROOYEN SC **18 Desember 2013**

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