



WATTS 2020-03

Year 90 + 03m

Monthly Newsletter of the Pretoria Amateur Radio Club
Maandelikse Nuusbrieff van die Pretoria Amateur Radio Klub

✉ PARC, PO Box 73696, Lynnwood Ridge 0040, RSA
<http://www.parc.org.za> zs6pta@zs6pta.org.za



Bulletins : 145.725 MHz : Sundays from 08h45 / Sondag vanaf 08h45
Relays: 1.840, 3.700, 7.066, 10.135, 14.235, 51.400, 438.825, 1297 MHz
and Echolink. Activated frequencies are announced prior to bulletins
Swoopshop : 2m and 7.066 MHz live on-air after bulletins
Bulletin repeats on Mondays / herhalings op Maandae : 2m 19h45



Albert Schreuder ZS6SE, Zack Pienaar ZR6ZAK, Gerrie Leonard ZS6GTK en sy dogters Kristen (langs hom vol modder saam met 'n vriendin) en Taylor-Dane (agter), Weon van der Vyfer ZS6LKF en sy gade Natasia by Roodeplaat Dam tydens die SARL Velddag kompetisie op die 8^{ste} Februarie 2020. Meer op Bladsye 5-6

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Club Meetings / Klub Vergaderings

Club Committee Meeting :

The next Meeting for the 2020/21 PARC Committee will be held on the 26th of March 2020. Venue to be announced.

PARC Committee Members : 2019 – 2020 / PARK Komiteede : 2019 - 2020

<u>Name & Callsign</u>	<u>Portfolio/s</u>	<u>Email Address</u>	<u>Tel No</u>	<u>Mobile No</u>
Louis de Wet ZS6SK	Chairman, Watts, SARL, ICASA	louis.zs6sk@gmail.com	012-349-1044	072-140-9893
Graham Reid ZS6GJR	Vice Chairman, Treasurer, Website	greid@wol.co.za	012-667-2720	083-701-0511
Johan de Bruyn ZS6JHB	Rallies, Repeaters & Membership	zs6jhb@gmail.com	012-803-9418	079-333-4107
Irene Myburgh ZS6IEA	Club Secretary & Social	irene@srsa.gov.za	012-304-5109	082-462-6001
Albert Schreuder ZS6SE	Contests, Social & Taxation	albert.schreuder.za@gmail.com	012-361-6133	082-562-3825

PARC Co-opted Members : 2019 – 2020 / PARK Ge-koopteerde Lede : 2019 - 2020

<u>Name & Callsign</u>	<u>Portfolio/s</u>	<u>Email Address</u>	<u>Tel No</u>	<u>Mobile No</u>
Alméro Du Pisani ZS6LDP	Flea-markets, SARL Bulletins	almero.dupisani@up.ac.za	012-420-3779	083-938-8955
Tony Crowder ZS6CRO	Auditor	tcrowder@telkomsa.net	011-672-3311	
Pierre Holtzhausen ZS6PJH	Contests	zs6pjh@gmail.com		082-575-5799
Pieter Myburgh ZS6PAM	Repeaters	wooden@mweb.co.za		076-140-7562
Hans Kappetijn ZS6KR (Hon.)	SARL Bulletins, Swop Shop	QRVservices@gmail.com	012-333-2612	072-204-3991
John Minter ZS6LED	RAE Training, Technical	john.minter.za@gmail.com	012-349-0019	083-291-5422

Birthdays and Anniversaries / Verjaarsdae en Huweliks Herdenkings

Member's Birthdays March 2020 / Lede Verjaarsdae Maart 2020

01 Ben Greyling ZS6YVC	22 Ivan Jancuska (Hon. Member) ZS6CCW
11 Des van Schalkwyk ZR6JET	24 Marike Roux ZS6MRX
14 Uys Classen ZS6UYS	27 Sarel Stapelberg ZS6EK
22 Julian Bouttell ZS6AOU	

Spouse's March 2020 / Gades Maart 2020

05 Sue, spouse of Tony Crowder ZS6CRO
 08 Vasthi, gade van DP Du Toit ZR6DP
 12 Rita, spouse of Vitor Gouveia ZS6VG
 18 Joydene, gade van Albert Schreuder ZS6SE
 19 Ria, gade van Henk Stuivenberg PA0STU
 21 Martie, gade van JB de Beer (Erelid) ZR6YV
 24 Marike, gade van Andre Roux ZS6ARX
 30 Madelaine, gade van George Ellis ZS6GWE
 31 Annatiie. gade van Pieter Fourie ZS6CN

Anniversaries March 2020 / Herdenkings Maart 2020

06 Pikkie en Willie Classen ZS6IAM
 25 Irene ZS6IEA en Pieter ZS6PAM Myburgh
 26 Sharmaine en Louis de Wet ZS6SK
 27 Fiona en Etienne Naude ZS6EFN
 30 Vasthi en Daniel Du Toit ZS6DP
 31 Liezel en Sybrand Van der Spuy ZS6SY

Member's Birthdays April 2020 / Lede Verjaarsdae April 2020

10 Nic Louw ZS6NWL	16 Andre Roux ZS6ARX
19 Etienne Naude ZS6EFN	24 Jaco Steyn ZSL6119

Spouse's April 2020 / Gades April 2020

10 Joey, spouse of Graham Reid ZS6GJR
 15 Joanne, spouse of Evan Seligmann ZS6ELI
 16 André ZS6ARX, gade van Marike Roux ZS6MRX
 22 Marita, gade van Roy Alexander ZS6MI
 27 Ronel, gade van Emil Bohme ZS6EGB
 29 Heather, spouse of Vincent Harrison ZS6BTY

Anniversaries April 2020 / Herdenkings April 2020

01 Ronel en Dawid Jansen van Rensburg ZS6VS
 06 Lyn en André van Tonder ZS6BRC (Erelid)
 10 Joanne and Evan Seligmann ZS6ELI
 30 Joey and Graham Reid ZS6GJR

Lief en Leed / Joys and Sorrows

Corrie de Bruyn, gade van Johan de Bruyn ZS6JHB het haar eerste reeks chemoterapie ondergaan, en haar volgende behandeling is geskeduleer vir die 23^{ste} Maart. Julle is in ons gedagtes en gebede en ons wens julle alle sterkte toe.

Pine Pienaar ZS6GST was onlangs in die hospital se intensiewe eenheid vir behandeling. Hy is twee weke terug ontslaan en sterk tans tuis aan. Alle sterkte aan Pine en sy gesin.

PARC Membership Fees / PARK Ledegelde

For the 2019-2020 year, there will be no increases in Club Membership fees. Club Fees therefore remain at R160 for Ordinary Members, and R60 for Pensioners and Spouse. Vir die 2019-2020 jaar sal daar geen toenames in die Klub Lidmaatskap gelde wees nie. Dus bly die gelde op R160 vir Gewone Lede, en R60 vir Pensionarisse en Gade.

PARC SUBS : PARK LEDEGELD : FROM / VANAF : 30-06-2018

Bank	First National Bank	Ordinary Members / Gewone Lede : R160 Spouses / Pensioners : R60	Your call sign must appear as statement text!
Branch Code	25 20 45		
Account No	546 000 426 73		
Please remit your subs in time to our Treasurer, or pay per transfer into the PARC account Betaal asb. u ledegelde betyds aan ons Tesourier, of betaal per oorpasing in die PARC rekening			

Please Note : If your Club fees are not paid up to date, birthday details cannot be displayed in Watts

PARC Bulletin Roster / PARK Bulletin Rooster

PARC Bulletins are presented on Sunday mornings at approximately 08h45, after the SARL Bulletins in English and Afrikaans, from 08h15. The Bulletin Presenters for the following two months are presented below. Please do contact the applicable presenter beforehand if you wish to make a contribution to the Bulletin. PARC Bulletins are broadcast on the 2-meter repeater on 145.725 MHz, and 70 cm on 438.025 MHz. Relays are done on 7.060 MHz by Hans Kappetijn ZS6KR and on Echolink by Johan Lehman ZS6JPL. A re-broadcast of the Bulletin is done the following Monday evening at 19h45 by Hans ZS6KR.

PARK Bulletins word op Sondag oggende aangebied om 08h45, na die SARL Bulletins in Engels en Afrikaans, vanaf 08h15. The Bulletin aanbieders vir die volgende twee maande word onder aangedui. Kontak gerus die toepaslike Bulletin leser indien u 'n bydrae tot die Bulletin wil maak. PARK Bulletins word uitgesaai op die 2-meter herhaler op 145.725 MHz, en 70cm op 438.205 MHz. Herleidings word gedoen op 7.060 MHz deur Hans Kappetijn ZS6KR, en op Echolink deur Johan Lehman ZS6JPL. 'n Heruitsending van die Bulletin geskied die opvolgende Maandag aand om 19h45 en word behartig deur Hans ZS6KR.

PARC Bulletin Presenters : January - March 2020

Date	Presenter	Date	Presenter
8 March 2020	Louis de Wet ZS6SK	26 April 2020	Johan de Bruyn ZS6JHB
15 March 2020	Albert Schreuder ZS6SE	3 May 2020	Louis de Wet ZS6SK
22 March 2020	Alméro Du Pisani ZS6LDP	10 May 2020	Albert Schreuder ZS6SE
29 March 2020	Johan de Bruyn ZS6JHB	17 May 2020	Alméro Du Pisani ZS6LDP
5 April 2020	Louis de Wet ZS6SK	24 May 2020	Johan de Bruyn ZS6JHB
12 April 2020	Albert Schreuder ZS6SE	31 May 2020	Louis de Wet ZS6SK
19 April 2020	Alméro Du Pisani ZS6LDP	7 June 2020	Albert Schreuder ZS6SE

PARC Fleamarket Dates 2020 / PARK Snuffelmark Datums 2020

The PARC Flea Market dates for 2020 will be on:
The PARK Snuffelmark datums vir 2020 sal wees op:

4 April ; 1 August ; 31 October
(From 10h00 / Vanaf 10h00)

To book a table, please do contact: / Om 'n tafel te bespreek, kontak gerus:
Alméro Du Pisani ZS6LDP at 083-938-8955 or almero.dupisani@up.ac.za

Diary of Contests & Events / Dagboek van Kompetisies en Gebeure

Contests and Events - March 2020 / Kompetisies en Gebeure - Maart 2020 (UTC Times)	
01	SARL Hamnet 40m Simulated Emergency Contest: 12h00-14h00
02	RSGB 80m Club Championship, Data: 20h00Z - 21h30Z
03	World Wildlife Day: https://www.wildlifeday.org/
04	UKEICC 80m Contest: 20h00Z - 21h00Z
08	International Women's Day: https://www.internationalwomensday.com/
08	SARL YL Sprint
05 - 08	Hobby-X Johannesburg: Ticketpro Dome, Northgate: https://www.hobby-x.co.za/
11	RSGB 80m Club Championship, CW: 20h00Z - 21h30Z
14 - 15	RSGB Commonwealth Contest: 10h00Z - 10h00Z
14 - 15	SARL VHF/UHF Analogue Contest: 12h00Z - 10h00Z
14 - 15	TESLA Memorial HF CW Contest: 18h00Z - 05h59Z
21	Human Right's Day
21	World Down Syndrome Day: https://www.worlddownsyndromeday2.org/
21 - 22	Russian DX Contest: 12h00Z - 12h00Z
22	World Water Day: https://www.worldwaterday.org/
23	World Meteorological Day: https://public.wmo.int/en/resources/world-meteorological-day/upcoming-world-meteorological-day-themes
25	UKEICC 80m Contest: 20h00Z - 21h00Z
26	RSGB 80m Club Championship, SSB: 20h00Z - 21h30Z
28 - 29	CQ WW WPX Contest, SSB: 00h00Z - 23h59Z
Contests and Events - April 2020 / Kompetisies en Gebeure - April 2020 (UTC Times)	
02	SARL 80m QSO Party: 17h00Z - 20h00Z
03 - 04	SARL National Convention
04 - 05	SP DX Contest: 15h00Z - 15h00Z
11 - 12	JIDX CW Contest: 07h00Z - 13h00Z
12	Hungarian Straight Key Contest: 15h00Z - 17h00Z
18	World Amateur Radio Day
17 - 18	Holyland DX Contest: 21h00Z - 21h00Z
18 - 19	YU DX Contest: 07h00Z - 06h59Z
25 - 26	10-10 International Spring Contest, Digital: 00h01Z - 23h59Z
25 - 26	SP DX RTTY Contest: 12h00Z - 12h00Z
25 - 26	Helvetia Contest: 13h00Z - 12h59Z
<p>The Pretoria Amateur Radio Club does not accept responsibility for the accuracy of contest details listed above. For verification and more information, please visit the SARL website, www.sarl.org.za, as well as the WA7BNM international contest calendar at the following website: http://hornucopia.com</p>	



The Pretoria Amateur Radio Club hereby invites all members to participate and contribute towards the contest effort of the Club. The contest diary for March and April is presented above, and regular updates on activities are presented by Albert Schreuder ZS6SE on our Sunday morning Bulletins on 145.725 MHz from 8h45. If you wish to participate in PARC contest activities, please do contact Albert ZS6SE for more information (contact details on page 2).

Die SARL Velddag : PARK lede trotseer die reën by Roodeplaat

Die SARL velddag kompetisie wat op die 8^{ste} Februarie plaasgevind het, het landswyd baie belangstelling gelok tydens die naweek. Die reën waarvoor ons altyd so dankbaar is, het geen demper op die gees van die deelnemers geplaas nie, en soos on op die voorblad van die nuusbrieff kan sien, het enkele deelnemers entoesiasies deelgeneem terwyl die reën saggies neergesak het. Terwyl Albert ZS6SE hard gewerk het om kontakte op 40m te maak, het Zack ZR6ZAK en Weon ZS6LKF agter in Zack se spesiaal toegeruste bakkie op 20m geroep. Gerrie ZS6GTK het digital modus FT8 gewerk tydens die kompetisie.



Albert Schreuder ZS6SE werk kompetisie op 40m



Zack ZR6ZAK, Gerrie ZS6GTK en Weon ZS6LKF



Tyd vir kosmaak: Gerrie en Zack pak wors in die braaipan terwyl Gerrie se dogter handig is met die gaarmaak





Albert het 'n Spiderbeam opslaanbare mas saamgebring wat hy, Zack en Gerrie oprig



Why is Betelgeuse losing it's shine? Or isn't it?

Looking up at the Orion constellation during the summer months one cannot other than admire the beauty and regularity of this stellar magnificence. Although it appears as a two dimensional formation in the sky, it consists of a number of stars which are at various distances from the earth. The two brightest stars, Betelgeuse and Rigel are 624 and 772 light-years distant respectively from the Earth. Other notable stars include Alnitak (800 light-years) (ζ - Zeta), Alnilam (1342 light-years) (ϵ - Epsilon) and Mintaka (916 light-years) (δ - Delta) which form the well-known belt of Orion (Figure 1).

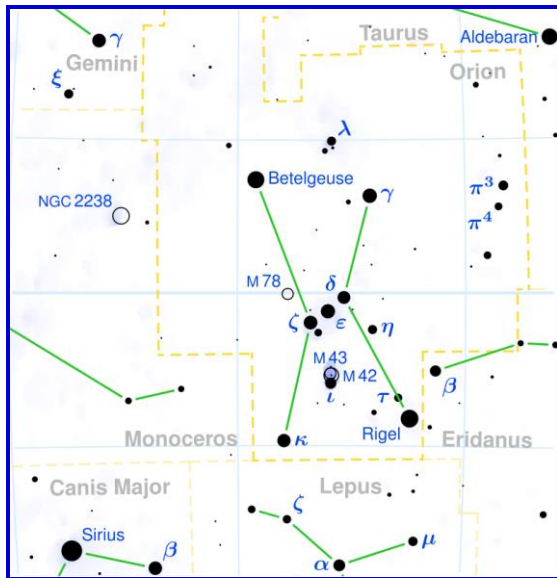


Figure 1: Two dimensional view of Orion

Betelgeuse, the second brightest star in Orion, also known as Alpha- α Orionis, is a massive M-type red supergiant, nearing the end of its life, which will manifest as a supernova explosion that will be visible from Earth. Rigel, or Beta- β Orionis, is a B-type supergiant which is the sixth brightest star visible. This star will also eventually reach its existence as a supergiant, and will also collapse in a supernova and turn into a white dwarf.

There is currently no reason to believe that Betelgeuse will supernova soon, or within the next 100 000 years, but it is hoped that we will witness the first naked-eye supernova in our galaxy since 1604 when Johannes Kepler witnessed the supernova of SN 1604 in the Ophiuchus constellation^[1].

It is quite a feat to imagine the size of Betelgeuse, as it is 900 times our sun's radius, occupying approximately 700 000 000 times the volume of our sun. If Betelgeuse were to replace our sun, life on Earth would not exist, as its volume would engulf all the planets from Mercury to Jupiter^[1]. During its lifetime, enormous amounts of material (matter and gas) is ejected from Betelgeuse, and as it reaches its end when the supernova stage approaches, it will shed more mass, continue to expand, dim-and-brighten chaotically, while it progressively burns the heavier elements in its core. However, at some critical point in the star's evolutionary process, silicon in the core will be depleted, and the radiation pressure deep inside the star will plummet. As this pressure was the only thing holding the star up against gravitation collapse, the inner core, containing heavy elements such as Iron, Cobalt and Nickel will now implode^[1].

During this implosion, the innermost heavy atomic nuclei (Fe, Co, Ni and others) will be forcefully slammed together, fusing into an enormous ball of neutrons^[1]. The outer layers of the star also collapse, which rebound against the dense proto-neutron star core, and triggers an incredible burst of nuclear fusion. As the layers pile up, they rebound, creating waves of fusion, radiation, and pressure that cascade through the star^[1]. These fusion reactions are quite rapid, and take place within 10 seconds. The majority of energy from these reactions are emitted from the star as neutrinos, which are the first signals to escape from the star, and also the first to be observed on earth following a supernova event. Due to the high energy levels of 10-50 MeV imparted by supernovae to these particles, the neutrinos will move at a speed close to that of light.

On the 23rd of February 1987 (SN1987A: Figure 2), the closest observed supernova since Kepler's supernova (8-9 October 1604), which is 168 000 light-years away from Earth, was observed, which created a signal of approximately 20 neutrinos across three small neutrino detectors which were operational at that time^[1]. Should Betelgeuse supernova, a signal of neutrinos 70 000 times stronger would be observed with our currently larger and more sensitive neutrino detectors.

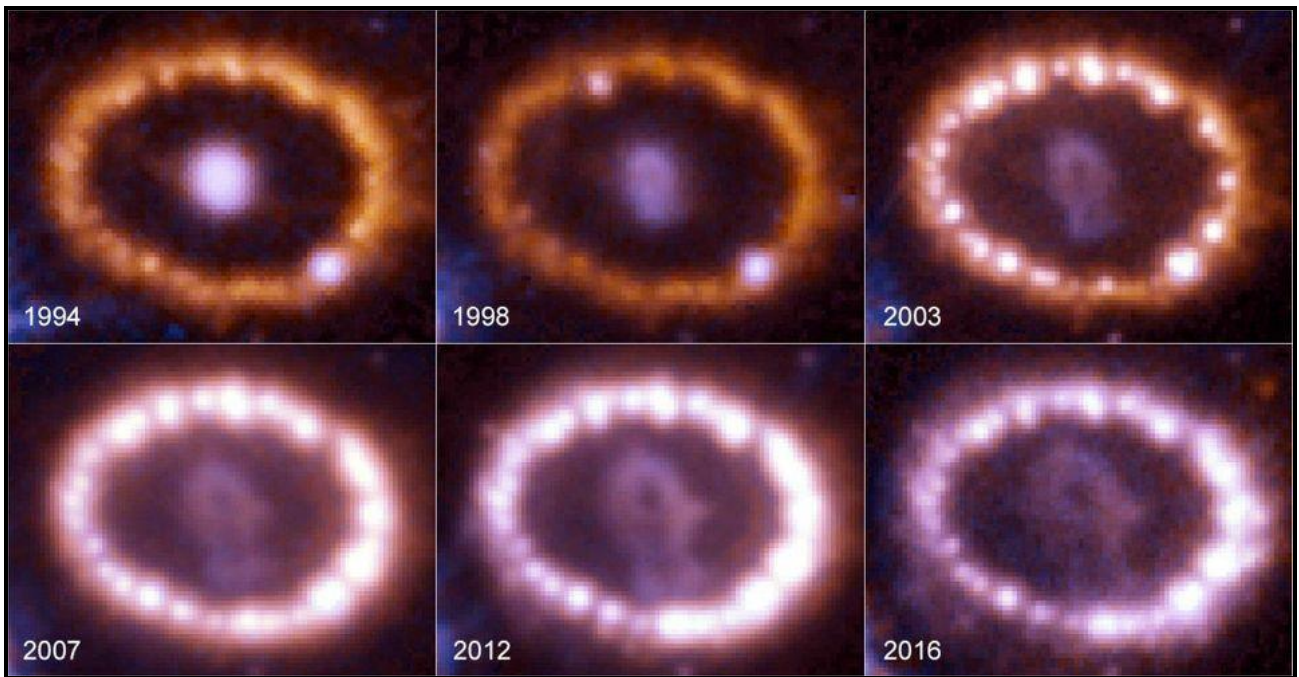


Figure 2: The SN1987A type II supernova which was first observed on 23 February 1987, showing the outward moving material originating from the shockwave, colliding with material ejected from the star, heating and illuminating the material as the collisions occur. Subsequent photographs from 1994 to 2016 are shown^[Ref 1].

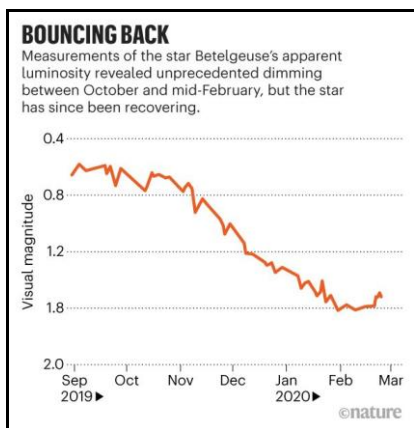
Should Betelgeuse go supernova in 2020, the first signature of this event would be high-energy neutrinos flooding world-wide neutrino detectors in a burst lasting 10-15 seconds^[1]. During this time period, the luminosity of Betelgeuse would spike by a factor of 7000, which would be equivalent to 40 times brighter than the planet Venus. This peak brightness would last only for a few minutes, where after it will decrease to about 5 times brighter than it previously was. However, then the actual supernova rise will commence. This will be followed by a period of approximately 10 days where Betelgeuse will become as bright as the full Moon (Figure 3).



Figure 3: An artist's view of the Orion constellation should Betelgeuse supernova

In the period following the supernova, the brightness of the star will fade away to barely being brighter than Venus in approximately 4 months, while after 1-2 years it will fade out of existence, only visible through a telescope. The constellation of Orion, which has been a nightly beacon for many of us, will probably never be the same again.

However, whether it is good news for the Orion-romantics or bad news for astronomers, the latest news released from 26 February 2020^[1,2] indicate that the brightness of this star has increased by approximately 10% from its dimmest point (Figure 4), this according Edward Guinan, an astrophysicist at Villanova University, Philadelphia, Pennsylvania, whose team has been observing Betelgeuse for 25 years^[3].



Many speculations go around whether the erratic swings in the brightness of Betelgeuse may indicate that the star is nearing the end of its life. Although Betelgeuse is estimated to be less than 10 million years old, astrophysicists estimate that the supernova end will be within the next 100 00 years. Will we be so fortunate to witness such a rare and magnificent event? Time will only tell. As Guinan stated: "I'm cheering for it to blow up."

Figure 4: Luminosity measurements of Betelgeuse from September 2019 to March 2020

^[1]Siegel, E. 2020. This is what we'll see when Betelgeuse really does go supernova.

<https://www.forbes.com/sites/startwithabang/2020/01/23/this-is-what-well-see-when-betelgeuse-really-does-go-supernova/#1eeea02943a2>

^[2]Castelvecchi, D. 2020. Mysterious faded star Betelgeuse has started to brighten again.

<https://www.nature.com/articles/d41586-020-00561-z>

^[3]Malan, J. The conclusion in the story of Betelgeuse. <https://www.newsbreak.com/news/00liDWJa/space-column-the-conclusion-in-the-story-of-betelgeuse>

YAESU FTDX 101D Transceiver

In next month's edition of Watts, a detailed review and comparison of the Yaesu FTDX 101D transceiver, which is considered as the new flagship in HF and 6-meter equipment, will be presented.



2020 Northern Regions Rally Calendar

Rnd	Date	Province	Location
1.	28 March	Mpumalanga	Delmas
2.	26 April	Mpumalanga	Sabie
3.	22 August	Mpumalanga	Bad Plaas
4.	17 October	Mpumalanga	Belfast

4X4 Rally Calendar: February – June 2020

Round	Date	Event	Location
1	01-Feb-20	GXCC	Bronkhorstspuit
1	08-Feb-20	NAT BIKE	Lesotho
1	28/29 Feb 2020	SACCS	Dullstroom
2	07-Mar-20	GXCC	TBA
1	27/28 Mar 2020	NRC	Delmas
2	3/4 Apr 2020	SACCS	Sugarbelt
2	18-Apr-20	NAT BIKE	KZN
2	25/26 Apr 2020	NRC	Sabie
3	09-May-20	GXCC	TBA
3	22/23 May 2020	SACCS	Clarins
3	29/30 May 2020	NRC	Porterville
4	06-Jun-20	GXCC	TBA
4	26/27/28 Jun	SACCS	Selibe Pikwe

Please do contact Johan de Bruyn ZS6JHB or Graham Reid ZS6GJR for more information

Long Term HF Propagation for March 2020: Courtesy Vincent Harrison ZS6BTY

The graph below shows the predicted F-layer Maximum Usable Frequency (MUF) for propagation from Pretoria^[1] using monthly sunspot numbers from SILSO^[2].

Local Propagation (up to 500 km): The F or F2 critical frequency (f_oF_2) is the MUF for short range, near vertical incidence sky-wave (NVIS) propagation.

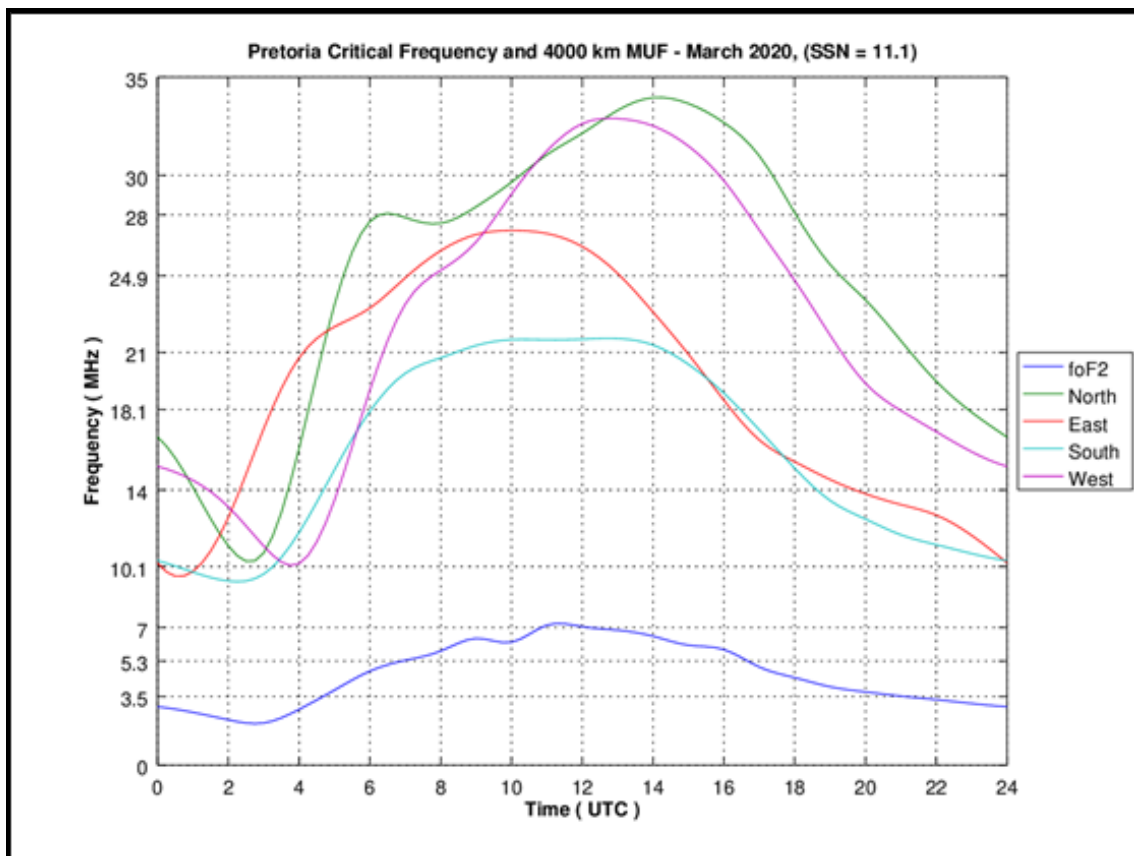
Long Distance Propagation: The MUF for a first hop of 4000 km in the cardinal directions is labeled North, East, South and West. They indicate the direction that propagation may be expected.

Worldwide Propagation Maps: <http://www.parc.org.za/index.php?page=propagation>

"Prediction is difficult, especially when dealing with the future". . . Danish Proverb. 73 Vincent, ZS6BTY

^[1]FTZMUF2: A simple method of estimating the ionospheric parameters of f_oF_2 and M(3000) with the aid of a home computer - Thomas Damboldt and Peter Süßmann, Deutsche Bundespost, December 1988.

^[2] Silso 12-month forecasts of the monthly sunspot number (<http://sidc.oma.be/silso/FORECASTS/prediML.txt>)



C/O NELSPOORT & 801 MALMESBURY STR, WINGATE PARK, PRETORIA [S25.49.36 & E28.16.07]

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