



Brilliants Programme winner ready to join

GENERATION SPACE



Matimba Manganyi, who is studying for his BSc degree in Astronomy and Astrophysics at the University of the Witwatersrand in Johannesburg, is one of the National Science and Technology Forum (NSTF)'s 2023 Brilliants Programme winning students. Who better to profile for our "Generation SPACE" edition? Read on to find out why Matimba decided to choose this cosmic career path.

Tell us a bit about yourself. Who are you? What inspires you?

I was raised in Mabopane, Pretoria, in Gauteng and I went to Patrick Moloto Primary School and Letlotlo Secondary School, both of which are located in Mabopane, and I am now studying towards a BSc in Astronomy and Astrophysics at Wits University, Johannesburg. I am a quiet person, I don't speak much. I like reading many books about maths and science. I've read many books about physics, astrophysics and mathematics written by famous scientists like Neil deGrasse Tyson and the late professor Stephen Hawking and Carl Sagan before even coming to university. I am dedicated to my studies and I am inspired by how the universe works and how we can establish laws about physical systems and use those laws to improve our lives and find better and more convenient ways to solve the problems that we have.

Why did you choose the course you are studying?

I want to learn about the physics of the universe, I want to know how everything that we see around us came into being, how does the sun remain bright and shining every day whilst a wood fire can only burn for a few hours, I want to know how all the atoms in our bodies were made through fusion in the cores of earlier generations of stars, I want to understand the reasons behind the periodic motion of the moon and its phases as well as the motion of the Earth on its orbit around the sun due to gravity. I also want to be one of the scientists that will do research in the field of astrophysics to advance our understanding of the universe.

Where do you see yourself 10 years from now?

In 10 years from now I see myself as an astrophysicist doing my own research in stellar astrophysics, which is about the birth, life and death of stars, and I will be doing research in

the big bang theory and I hope to be employed in one of the observatories in South Africa such as the SKA and the SALT to do my research at. I also see myself as an award recipient for the NSTF Awards and one of the best scientists on the continent and with international recognition for my research in astrophysics and mathematics.

Why do you enjoy science and maths?

I enjoy science and maths because of the different methods of solutions that the pair offer us for every day problems like figuring out the best way to make a product that will ensure a maximum profit for a business in maths, and I also enjoy working through the complexity of the theories and problems that we come across in maths and science and I enjoy learning about nature and the way that things around us work, like the energy changes that happen when two vehicles collide and how to improve the safety inside vehicles during a collision.

Tell us a bit about your school and your teachers?

Letlotlo Secondary School in Mabopane looks like an average school just like any other but it is where I discovered my potential, it is where I made friends that I will remember for a very long time in my life and it is where I got the help that I needed from my teachers in my subjects whenever I was struggling. I had excellent teachers that were always around at school every day including on weekends during which we received extra lessons in the various subjects that we did at school.

Why do you think some people have problems doing well in maths and science?

Maths and science are not easy, they require time and dedication to study and practise in order to gain a good understanding of the concepts. Some people may not put in enough time studying maths and science which leads to a poor understanding of the concepts and it can make it very difficult to understand or answer questions based on those concepts.

What advice do you have for school learners who struggle with these subjects?

Give yourself time studying and practising because some concepts take time to learn and understand, so keep on working and studying towards understanding the concepts. Ask for help from your teachers, they are there to help you to learn the content in the subjects. Give yourself time to rest and make sure to have enough sleep every day so that your mind can be in its optimum state after waking up every day and don't give up.

Any tips for learners in grades 11 and 12?

Study and practise every day if you want to achieve good grades, even if you are tired just use about 10-15 minutes answering just a single question and I assure you that it will be beneficial. Use question papers from past years

to practice and ask for help if you cannot understand or answer questions. Use the examination guidelines given to you or download them from the Department of Basic Education's website or just look them up on Google and download them to look at what you are supposed to know, define, understand and what you will be expected to answer, because the exams are based on what is in the examination guidelines; the exam will not include content that is not in the exam guidelines. Always focus and listen in class because you don't have much time to learn all these concepts and you cannot waste your time in class playing and then use more of your time to read through the same information that you could have just learned right away in class. Set goals for yourself that you want to achieve and work towards those goals every day. Take care of yourself, have regular exercise, try to eat balanced meals as much as possible, don't let the social aspect of your life suffer because of your studies, remember to spend time with friends and family to not let your mental health suffer and make sure to get enough sleep every day. Believe in yourself that you can achieve your goals.

What advice do you have for matriculants who have to apply for places in higher education institutions?

Do research to find out what qualifications are available to study what you like at which higher education institution, set goals for yourself to not only meet but to surpass the minimum requirements for that qualification to improve your chances of getting accepted, apply early and apply to NSFAS if you qualify and apply to as many bursaries and institutions as you can because you don't know whether the bursary that you apply for will accept you and fund your studies or not and you also don't know whether the institution you apply for will accept you for what you apply for or not.

What makes an achiever?

An achiever is not a person who knows everything from the beginning. An achiever is someone who fails at things, time and time again, but he/she uses what he/she has learned from failing to improve and become better and they don't give up when they encounter something that is challenging. An achiever is someone who knows his/her priorities, they wouldn't choose to waste time playing with friends, for example, instead of doing his work. This does not include the time that you set for yourself to say that 'I am going to spend time with friends and take care of the social aspect of my wellbeing.' An achiever is someone who doesn't look down on others just because they are better than them at something, but helps people to understand and improve where they can. Finally, an achiever is someone who never stops fighting for success no matter the hardships that they face. They stare straight into the face of uncertainty and difficulty, knowing what their goals are and what they are going to achieve. I believe that is a good definition of an achiever.

A message to South African youth in general?

Many of the youth don't see it, but our education system is built in a way such that if you excel or if you pass well, you will be very likely to receive funding from NSFAS or another bursary to study whatever you like at a public tertiary institution of your choice, provided that the institution has accepted you. Many of the youth in South Africa don't give themselves time to try to find out their talents and more about their interests because it is difficult to climb up the ladder of what they like toward success. I want to tell you that you have your own unique talent; follow that talent and your interests and become successful. It is not easy, considering all the distractions that the South African youth

face in modern times but you have to try to better yourself to the best of your ability. You can do this.

If you had one opportunity to speak directly to a very influential person, who would you choose and what would you say to them?

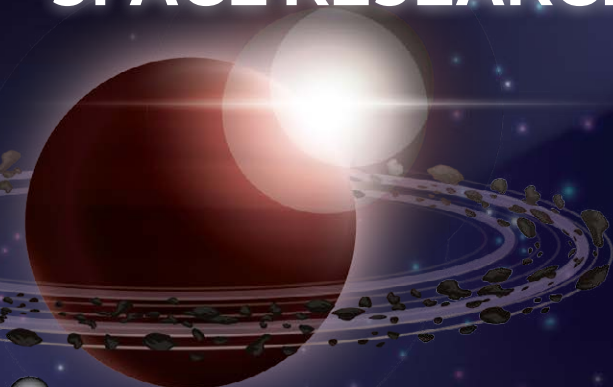
I would choose to speak to Neil deGrasse Tyson. I would tell him that I first discovered astrophysics through his television shows and I would tell him that he inspired me to want to work with maths and physics just like him and to become an astrophysicist. I would also ask him what inspired him to become an astrophysicist and a science communicator.

Matimba Manganyi, yo a ithutelago BSc-degree ya gagwe ya Thutadinaledi le Fisiki ya Dinaledi Yunibesithing ya Witwatersrand ka Johannesburg, ke yo mongwe wa baithuti bao ba thopilego Lenaneo la Bosetšhaba la Mahlale le Theknološi (NSTF)'s 2023 Brilliants Program. Ke mang yo mokaone go profil bakeng sa kgatišo ya rena ya "Generation SPACE"? Bala mo go hwetša gore ke ka lebaka la eng Manganyi a tšere sephetho sa go kgetha tsela ye ya mošomo wa cosmic.

Translated into Sesotho sa Leboa/Sepedi by Tebatso Isaac Makwala



CENTRE FOR SPACE RESEARCH



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