

MISSION MEERKAT

IN THE NEW SKA LEARNING FACILITY IN THE KAROO AREA OF THE NORTHERN CAPE.

HANNAH, WHAT DO YOU WANT TO BE WHEN YOU GROW UP?

I WANT TO BE A WRITER! THAT IS, IF I CAN FIND SOMETHING TO WRITE ABOUT!



WHAT ABOUT YOU?



ACTUALLY, I THINK I WANT TO BE A SCIENCE TEACHER.

THAT'S A GREAT IDEA! YOU COULD TEACH KIDS ALL ABOUT THE MEERKAT TELESCOPE AND THE SKA CORE SITE HERE IN THE CENTRAL KAROO OF SOUTH AFRICA.



IN FACT, I'D LOVE TO LEARN MORE ABOUT RADIO ASTRONOMY, AND WHAT IT'S DONE FOR THE REST OF THE WORLD!



...I SEE ANOTHER OF YOUR ADVENTURES COMING ON.

WELL, IN ORDER TO ACHIEVE GREAT THINGS, YOU HAVE TO TAKE THE FIRST STEPS OF DISCOVERY.





45 MINUTES LATER, ON A DUSTY KAROO ROAD...



ON YOUR LEFT IS A NEVER-ENDING SEA OF GALAXIES. THE **MORE POWERFUL** OUR RADIO TELESCOPES GET, THE **MORE GALAZIES** WE FIND!



AND MEERKAT IS GOING TO BE THE **MOST POWERFUL** TELESCOPE IN ITS CLASS!

NOW WE'RE PASSING THROUGH SOME GALACTIC DUSTCLOUDS! THESE CLOUDS WILL EVENTUALLY CONDENSE AND IGNITE, AND THAT'S HOW STARS ARE BORN!

LET ME GUESS, RADIO ASTRONOMY TAUGHT US THAT, TOO?

THAT'S THE **ORION NEBULA**, WHERE LOTS OF **BABY STARS** ARE BORN! RADIO ASTRONOMY HELPS US SEE THROUGH THE STARDUST TO LEARN ABOUT THE **LIFE CYCLE** OF STARS AND PLANETS AND MORE...



WHAT ABOUT WHEN STARS DIE?

GOOD QUESTION. THAT'S CALLED A **SUPERNOVA**, AND I THINK THERE'S ONE ON OUR RIGHT.

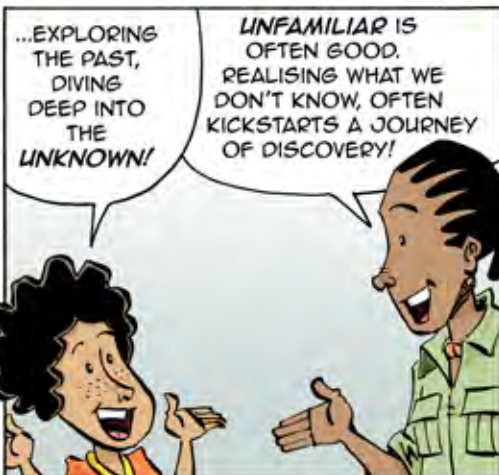
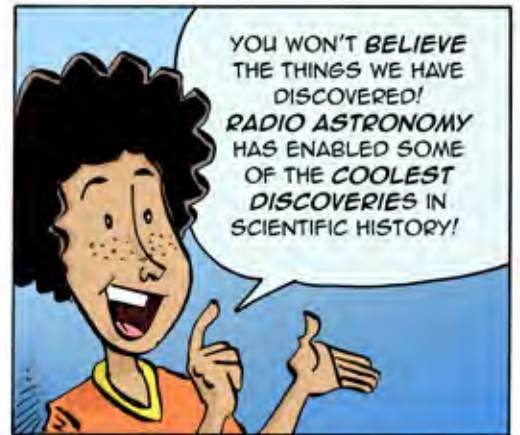
WHOA! WHO KNEW DEATH COULD BE SO **BEAUTIFUL**?

SUPERNOVAS ARE SUCH MASSIVE EVENTS THAT THEY PRODUCE ALL THE HEAVY ELEMENTS WHICH MAKE UP PLANETS AND THE BUILDING BLOCKS OF LIFE!

STUDYING SUPERNOVAS WITH RADIO TELESCOPES HAS HELPED US UNDERSTAND WHAT STARS ARE **MADE** OF AND HOW CHEMICALS - LIKE OXYGEN, HYDROGEN, CARBON AND NITROGEN - ARE FORMED UNDER EXPLOSIVE PRESSURES.

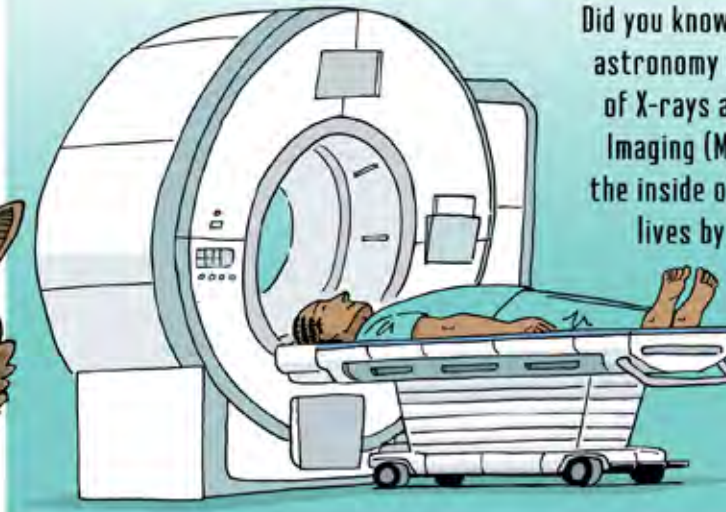
NOW WE'RE ZOOMING THROUGH THE **MILKY WAY**!

RADIO ASTRONOMY HAS HELPED US BETTER UNDERSTAND THE **MAGNETIC FIELDS** AND **FORCES** AT PLAY HERE, TOO.





X-RAY AND MEDICAL IMAGING TECHNOLOGIES



Did you know that advances in radio astronomy have improved the field of X-rays and Magnetic Resonance Imaging (MRI) to create images of the inside of our bodies. This saves lives by detecting tumours and diagnosing fractures.

GPS AND TRACKING DEVICES



Need directions? Your Global Positioning System (GPS) relies on technology developed by radio astronomy to keep it accurate.

ATOMIC CLOCKS



Atomic clocks are the most accurate clocks on the planet. Research linked to radio astronomy is working to make them even more accurate.



BLUETOOTH AND WIFI



A group of radio astronomers in Australia developed technology that helps WiFi signals travel with speed and clarity. Without them, our internet would be painfully slow.

SECURITY SCANNER



X-ray observation technology developed for radio astronomy is used in airport security scanners.

CELL PHONES AND TELEPHONES

Nobody likes a crackly, bad quality phone call. Luckily, the invention of radio astronomy led to various advancements in communication devices, so you can chat to your friends wherever they are in the world, and hear every word clearly.



RADIO

Radio transmission technologies let us turn the volume up on our favourite tunes!





YOU *STILL* WANT TO BE A *WRITER* WHEN YOU GROW UP, HANNAH?

OH YA, *ESPECIALLY* AFTER TODAY.

ISN'T IT AMAZING THAT THE BEST IDEAS OFTEN APPEAR WHEN YOU'RE LOOKING FOR SOMETHING ELSE?



YOU MEAN, SOMETIMES THE BEST DISCOVERIES HAPPEN BY *ACCIDENT*?

YEAH, IF YOU SET OUT TO FIND SOMETHING, YOU MIGHT *DISCOVER* SOMETHING ELSE ALONG THE WAY!

...JUST LIKE *JANSKY'S* ACCIDENTAL DISCOVERY STARTED THE FIELD OF *RADIO ASTRONOMY*!



I CAN'T WAIT TO DISCOVER MORE, AND THEN *SHARE* ALL THAT KNOWLEDGE WITH OTHER KIDS ONE DAY!

YOU GUYS BETTER TAKE US ON ALL YOUR *ADVENTURES* IN *SEARCH* OF THE *UNKNOWN*!



UHM... I DON'T THINK I COULD HANDLE THAT *LOUD SNORING* OF YOURS, MY FRIEND.

HMPF... VERY FUNNY.

MAYBE WHILE WE'RE INVENTING NEW RADIO TELESCOPES, WE'LL FIND A *CURE* FOR MEERKAT'S *SNORES*!



HAHAHA! YOU GUYS MAKE ME LAUGH! I'M SO *GLAD* TO BE ON THIS *JOURNEY* OF *ADVENTURE* WITH YOU ALL!

ME TOO, HANNAH!

ME THREE!

ME FOUR, FOR SURE!