

SATURDAY 12 MAY 2018

SAT 19:00 Nature's Epic Journeys (b07c4th3)
Caribou

A hundred thousand caribou face starving bears and wolves, deadly frozen rivers and rugged mountains as they undertake the world's longest land migration - 5,000 kilometres through the frozen Arctic wilderness of Canada and Alaska.

Liz Bonnin leads a team of scientists and film-makers using cutting-edge technology to follow the herd, providing insights into the individual lives of the animals. The caribou must reach their calving grounds before they give birth - failure would spell disaster.

SAT 20:00 Wild Burma: Nature's Lost Kingdom (p01hsd4k)
Episode 3

For the first time in 50 years, wildlife film-makers and scientists venture deep into the impenetrable jungles of Burma. Their aim is to discover if these jungles are still home to animals that are disappearing from the rest of the world.

For the last leg of their journey, the team search for the most iconic animal of them all, the tiger. To find it, they must split up. Wildlife camerawoman Justine Evans and the science team head to the tangled jungles of northern Burma, one of the largest swathes of unbroken forest in Southeast Asia. Wildlife cameraman Gordon Buchanan heads to the only other place in Burma where tigers may still exist, the far south. The forests of Karen State were once home to a thriving population of tigers, but this region has been isolated by war for over 60 years and little is known about the fate of the animals.

The team must overcome intense physical hardship and tough field conditions to find the evidence they need to help preserve this unique and largely untouched wilderness. What they discover could change the future of Burma's forests forever.

SAT 21:00 Salamander (b09tcs3)
Series 2: Blood Diamonds

Episode 9

Sofie and Jamie arrange a rendezvous in Brussels for him to hand over the flash drive to her father. Their conversation is monitored by P9 whose mole leaks the information to the Minnebach organisation.

SAT 21:45 Salamander (b09v8lqq)
Series 2: Blood Diamonds

Episode 10

Burton and his henchman get away with the incriminating flash drive as Vic Adams arrives to find the badly injured Paul. Adams admits to Paul that he has been frozen out of the P9 operation.

SAT 22:40 Burt Bacharach: A Life in Song (b06qmbz)
A unique concert staged at the Royal Festival Hall celebrating the music of the legendary songwriter and performer Burt Bacharach.

Some of Burt's most famous songs are performed by a stellar line-up of artists including Alfie Boe, Sophie Ellis-Bextor, Shaun Escoffery, Rebecca Ferguson, Justin Hayward, Michael Kiwanuka, Laura Mvula and Joss Stone. Burt himself also performs accompanied by his band. During the concert Burt chats to Michael Grade about the art of songwriting and shares the stories behind some of his best-loved hits.

SAT 00:10 ... Sings Bacharach and David! (b01gxl5w)

The BBC have raided their remarkable archive once more to reveal evocative performances from Burt Bacharach and Hal David's astonishing songbook. Love songs from the famous songwriting duo were a familiar feature of 60s and 70s BBC entertainment programmes such as Dusty, Cilla and The Cliff Richard Show, but there are some surprises unearthed here too.

Highlights include Sandie Shaw singing Always Something There to Remind Me, Aretha Franklin performing I Say a Little Prayer, Dusty Springfield's 'Wishin' and Hopin'', The Stranglers' rendition of Walk on By on Top of the Pops, The Carpenters in concert performing (They Long to Be) Close to You and Burt Bacharach revisiting his classic Kentucky Bluebird with Rufus Wainwright on Later...with Jools Holland.

SAT 01:10 Nature's Epic Journeys (b07c4th3)
[Repeat of broadcast at 19:00 today]

SAT 02:10 Wild Burma: Nature's Lost Kingdom (p01hsd4k)

[Repeat of broadcast at 20:00 today]

SUNDAY 13 MAY 2018

SUN 19:00 BBC Young Musician (b0b2xv8b)
2018

Final

After a series of thrilling category finals and semi-final, BBC Young Musician 2018 reaches its conclusion. Now only three musicians remain.

This year Symphony Hall in Birmingham plays host to the grand final, when these exceptional young finalists will perform a full concerto with the City of Birmingham Symphony Orchestra and the celebrated British conductor Mark Wigglesworth.

Clemency Burton-Hill and trumpet player Alison Balsom - herself a finalist in 1998 - join Josie d'Arby to present full coverage of what's sure to be a breath-taking finale to this year's competition. And that's not all - cellist of the moment Sheku Kanneh-Mason, who won the title in 2016, returns to perform the last movement of the Elgar Cello Concerto.

So who will follow in Sheku's footsteps and become BBC Young Musician 2018 in the competition's 40th anniversary year? Tune in to BBC Four for every note - it's not to be missed!

SUN 21:30 History of the Future: Cars (b00j4dfw)

Phill Jupitus looks at how we thought the car of the future was going to turn out and finds out why it didn't happen that way, focusing on the classic era of the 50s and 60s, a time when they hadn't quite yet worked out how to make cars fly and instead just made them look like they could.

In his quest to trace the dream car of his childhood, Phill visits the places where the future of motoring seemed to have arrived and learns about the visionaries who let their imaginations rove in the heroic days before marketing and 'sustainability' domesticated the car into the homogenous transports we see today.

The documentary is shot on location in Detroit's Henry Ford Museum and GM Heritage Centre, and the Science Museum in London, and has interviews with Jonathan Glancey and Sir Clive Sinclair.

SUN 22:00 The Sky at Night (b0b2xw15)

Gaia: A Galactic Revolution

For past three and a half years, ESA's Gaia Space telescope has been mapping the heavens in unprecedented detail. At the end of April 2018 it released precise data on over 1.3 billion stars in the Milky Way showing how they move over time and their distance from Earth. Maggie and Chris reveal some of the most surprising initial findings, from the discovery of wandering black holes, hyper velocity stars and 'transient phenomena' to a brand new age map of the Milky Way and concrete evidence of how our galaxy formed.

SUN 22:30 The Horizon Guide to Space Shuttles (b0109cc7)

In 2011, after more than 30 years of service, America's space shuttle took to the skies for the last time. Its story has been characterised by incredible triumphs, but blighted by devastating tragedies - and the BBC and Horizon have chronicled every step of its career. This unique and poignant Horizon Guide brings together coverage from three decades of programmes to present a biography of the shuttle and to ask what its legacy will be. Will it be remembered as an impressive chapter in human space exploration, or as a fatally flawed white elephant?

SUN 23:30 Britain's Star Men: Heroes of Astronomy (b07xjh6z)

Four British astronomers celebrate 50 years of work and friendship by going on a road trip to revisit some of the world's greatest observatories. In California, a world leader in observational astronomy at a time when America's space programme was at its height, the astronomers spent their formative years developing friendships that would last a lifetime, and making scientific discoveries that would change the course of history.

Together they represent the most productive period astronomy has ever had. Their journey through the southwestern United States allows them to see once again the places and landscape they explored as young men. Now in their seventies, they share their reflections on a life spent looking at the universe.

Star Men celebrates the history of stargazing - the inventions and discoveries that have enabled us to learn so much about the universe, but more importantly to understand how much more we have yet to discover.

SUN 00:30 Science and Islam (b00gq6h7)

The Empire of Reason

Physicist Jim Al-Khalili travels through Syria, Iran, Tunisia and Spain to tell the story of the great leap in scientific knowledge that took place in the Islamic world between the 8th and 14th centuries.

Al-Khalili travels to northern Syria to discover how, a thousand years ago, the great astronomer and mathematician Al-Biruni estimated the size of the earth to within a few hundred miles of the correct figure.

He discovers how medieval Islamic scholars helped turn the magical and occult practice of alchemy into modern chemistry.

In Cairo, he tells the story of the extraordinary physicist Ibn al-Haytham, who helped establish the modern science of optics and proved one of the most fundamental principles in physics - that light travels in straight lines.

Prof Al-Khalili argues that these scholars are among the first people to insist that all scientific theories are backed up by careful experimental observation, bringing a rigour to science that didn't really exist before.

SUN 01:30 How It Works (b01fkc5n)

Metal

Professor Mark Miodownik travels to Israel to trace the history of our love affair with gleaming, lustrous metal. He learns how we first extracted glinting copper from dull rock and used it to shape our world and reveals how our eternal quest for lighter, stronger metals led us to forge hard, sharp steel from malleable iron and to create complex alloys in order to conquer the skies.

He investigates metals at the atomic level to reveal mysterious properties such as why they get stronger when they are hit, and he discovers how metal crystals can be grown to survive inside one of our most extreme environments - the jet engine.

SUN 02:30 The Horizon Guide to Space Shuttles (b0109cc7)

[Repeat of broadcast at 22:30 today]

MONDAY 14 MAY 2018

MON 19:00 Beyond 100 Days (b0b2x4hk)

Series 1

14/05/2018

The latest national and international news, exploring the day's events from a global perspective.

MON 19:30 Civilisations Stories (b0b19v6v)

Series 1

The Remains of Slavery

Civilisations 'The Remains of Slavery' is presented by Bristol's Poet Laureate, Miles Chambers - whose ancestors were taken as slaves from west Africa to the Caribbean. Like the landmark series which has been running on BBC2, the history is told through objects and architecture - but in this West Country addition, they are all found in and around Bath and Bristol. The documentary reveals that while Bristol was responsible for the business end of the slave trade, Georgian Bath boomed on the back of the profits made from it. Throughout the programme we visit landmark sites, including Dyrham Park, home to the Blackamoor statues, the Salford Mill, where guinea kettles were made and exchanged for slaves, the Henbury slave grave, Beckford Tower and many more. Presenter Miles Chambers talks with experts of the West Country slave trade and explores the artefacts that keep the history alive.

MON 20:00 The Sky at Night (b077ryr3)

Stephen Hawking on Black Holes

The programme looks at the latest understanding of black holes, featuring an interview with Stephen Hawking. Black holes are one of the greatest mysteries in the universe. They behave in a way that is contrary to laws of physics and one has never actually been seen. However, the recent detection of gravitational waves, as predicted by Einstein, proves that black holes exist and provides a way to investigate their remarkable behaviour and properties.

MON 20:30 Hawking (b0078pzf)

Drama relating the remarkable story of Stephen Hawking's early years as a PhD student at Cambridge, following his search for the 'beginning of time' and his courageous struggle against life-threatening illness.

MON 22:00 Horizon (b0078y7h)
2005-2006

The Hawking Paradox

Series exploring topical scientific issues examines Professor Stephen Hawking's most controversial theory and possibly his greatest mistake.

For 30 years the most famous scientist in the world defended an extraordinary idea, an idea some claimed would undermine the whole of science. It was called the information paradox and it led one opponent to dub Hawking 'the most stubborn man in the universe'. But finally Hawking had to admit that he'd been wrong all along. Now, as he nears the end of his extraordinary career, Hawking's scientific legacy is being called into question like never before.

For a year Horizon filmed behind the scenes with Hawking as he struggled to finish what many thought was going to be his last scientific paper. If he succeeded he would potentially end his career on a high, confirming his status as one of the great figures in physics. But the odds were against him, as his physical health continued to decline.

This is an extraordinary story of one man's defiance of disability and his peers. It is a story that ranges from the beginning of the universe, which Hawking explored, to the intensive care unit of Addenbrookes, where he was taken and was critically ill for three months. On his hospital bed he had an insight which he hoped would form the basis of his latest comeback.

MON 22:50 The Search for a New Earth (b0953y04)

Planet Earth has been home to humankind for over 200,000 years, but with a population of 7.3 billion and counting and limited resources, this planet might not support us forever. Professor Stephen Hawking thinks the human species will have to populate a new planet within 100 years if it is to survive. With climate change, pollution, deforestation, pandemics and population growth, our own planet is becoming increasingly precarious.

In this landmark film, Professor Hawking, engineer and radio astronomy expert Professor Danielle George and Christophe Galfard, former student of Professor Hawking, join forces to find out if, and how, humans can reach for the stars and relocate to different planets. Travelling the globe, they meet top scientists, technologists and engineers who are working to answer our biggest questions. Is there another planet out there that we could call home? How will we travel across the vast distances of space to get there? How will we survive the journey? And how will we set up a new human civilisation on an alien world?

Christophe and Danielle journey to the heart of the Atacama Desert, visiting the aptly named 'Very Large Telescope', where they meet the astronomers who are discovering new planets outside our solar system every single day. But are any of them suitable for human life? Travelling deeper into the Atacama, microbiologist Maria Farias introduces Christophe to a strange life form could help us make an unlimited supply of oxygen on another planet.

In Houston, Texas, engineer and ex-astronaut Franklin Chang Diaz shows Danielle the plasma powered rocket engine that could revolutionise space travel, taking humans into space faster than ever before. On the arctic island of Svalbard, Christophe witnesses the stunning Northern Lights. This mystical phenomenon is a glorious by-product of Earth's protective magnetic field, deflecting dangerous radiation. In space, we can't take this protective field with us, but in the Netherlands, Christophe meets anaesthesiologist Dr Rob Henning, who believes hibernating bears may hold the key to protecting the human body from the hazards of space. Muscle wastage is another problem for potential planetary pioneers. Without gravity, space travellers lose muscle and bone strength at an alarming rate. However, the European Space Agency may have the answer - artificial gravity. Christophe takes a spin on a human centrifuge that could help keep us healthy on our journey to distant planets.

In Arizona, Danielle explores the giant greenhouses of Biosphere 2, where scientist Gene Giacomelli is working on ways to sustain human life on a planet with no atmosphere, growing plants for not just for food but also oxygen. His lunar greenhouse could provide enough oxygen for a single astronaut to survive on a planet with no atmosphere. And finally, at Kennedy Space Centre she meets fellow engineer Robert Mueller, who showcases NASA's own 'robot army', under development as a means of mining the natural resources and

building the infrastructure we need on another planet before humans even get there.

Taking in the latest advances in astronomy, biology and rocket technology. From the Atacama Desert to the wilds of the Arctic, from plasma rockets to human hibernation. We discover a whole world of cutting-edge research. This journey shows that Professor Hawking's ambition isn't as fantastical as it sounds - that science fact is closer to science fiction than we ever thought. As Professor Hawking states, 'We can, and must, use our curiosity and intelligence to look to the stars.'

MON 00:20 The French Revolution: Tearing up History (b042ttxl)

A journey through the dramatic and destructive years of the French Revolution, telling its history in a way not seen before - through the extraordinary story of its art. Our guide through this turbulent decade is the constantly surprising Dr Richard Clay, an art historian who has spent his life decoding the symbols of power and authority.

Dr Clay has always been fascinated by vandalism and iconoclasm, and believes much of the untold story of the French Revolution can be discovered through the stories of great moments of destruction. Who were the stone masons in the crowd outside Notre Dame that pulled down the statues of kings? Why do the churches of Paris still carry all the coded signs of anti-Christian state legislation? What does it mean, and who was carrying this out?

Telling the story of the French Revolution - from the Storming of the Bastille to the rise of Napoleon - as the significant modern outbreak of iconoclasm. Clay argues that it reveals the destructive and constructive roles of iconoclasts and how this led directly to the birth of the modern Europe.

MON 01:20 Top of the Pops (b08rc78m)

Peter Powell, Tommy Vance, Richard Skinner, Gary Davies and Adrian John present the pop chart programme, first broadcast on 29 December 1983. Features JoBoxers, Mike Oldfield, Thompson Twins, Tracey Ullman, The Cure, Phil Collins, The Belle Stars, Paul Young, Siouxsie & The Banshees, Spandau Ballet, Howard Jones, Rod Stewart, The Style Council and Culture Club.

MON 02:15 How It Works (b01fq06h)

Plastic

Professor Mark Miodownik tells the story of plastics - created in the lab, they have brought luxury to the masses and shaped the modern age. He recounts tales of the mavericks responsible for some of plastic's most outrageous failures and heady successes, from the explosive attempts to make a replacement for ivory billiard balls to the ultimately ubiquitous Bakelite.

Investigating at atomic level, Mark discovers the extraordinary properties that have allowed plastics to dominate our world and reveals how the next generation of plastics will take its inspiration from nature, creating man-made materials which behave as though they are alive and which could help rebuild the human body.

MON 03:15 Civilisations Stories (b0b19v6v)

[Repeat of broadcast at 19:30 today]

TUESDAY 15 MAY 2018

TUE 19:00 Beyond 100 Days (b0b2x4hj)

Series 1

15/05/2018

The latest national and international news, exploring the day's events from a global perspective.

TUE 19:30 James May at the Edge of Space (b00lc5ph)

James May always wanted to be an astronaut. Now, 40 years after the first Apollo landings, he gets a chance to fly to the edge of space in a U2 spy plane. But first he has to undergo three gruelling days of training with the US Air Force and learn to use a space suit to stay alive in air so thin it can kill in an instant. He discovers that during the flight there are only two people higher than him, and they are both real astronauts on the International Space Station.

TUE 20:00 Tomorrow's Worlds: The Unearthly History of Science Fiction (p01yqkdd)

Space

Series in which historian Dominic Sandbrook explores the most innovative and imaginative of all genres - science fiction. He is

joined by leading writers and film-makers, who tell the inside story of their best-known works.

In this first episode, Dominic looks at science fiction's enduring fascination with outer space, from Jules Verne's pioneering 19th-century vision of a voyage to the moon to the galaxy far, far away of Star Wars.

Along the way we learn what Star Trek has in common with the British navy, the deep sea inspiration for Avatar, how Ursula K Le Guin captured the 1960s sexual revolution in her acclaimed novel *The Left Hand of Darkness*, how Stanley Kubrick made *2001: A Space Odyssey* seem so believable, and why a man in a dressing gown became one of science fiction's best-loved heroes in *The Hitchhiker's Guide to the Galaxy*.

Among the interviewees are William Shatner and Nichelle Nichols (*Star Trek*), Anthony Daniels and Kenny Baker (*Star Wars*), Zoe Saldana (*Avatar*) and author Neil Gaiman.

TUE 21:00 The 21st Century Race For Space (b094f595)

A new age of space exploration, and exploitation, is dawning. But surprisingly, some of the boldest efforts at putting humans into space are now those of private companies started by a handful of maverick billionaire businessmen.

In this film, Brian Cox gains exclusive access behind the scenes at Virgin Galactic, Blue Origin and Spaceport America, exploring what is really happening in privately financed space flight right now. From space tourism to asteroid mining, and even dreams of colonies on Mars, these new masters of the universe refuse to limit their imaginations. But are private companies led by Jeff Bezos, Sir Richard Branson and Elon Musk really going to be able to pull this off? How will they overcome the technical challenges to achieve it? And is it really a good idea, or just a fool's errand?

Cox meets key players in the story - Bezos, founder of Blue Origin as well as Amazon, and Sir Richard Branson, founder of Virgin Galactic. He wants to find out how entrepreneurs - and engineers - really plan to overcome the daunting challenges of human space travel. It certainly hasn't been easy so far. Jeff Bezos has sold a further billion dollars of Amazon stock this year to fund Blue Origin. Branson has been working on Galactic for more than a decade. Lives have been lost. And some companies have already all but given up. But real progress has been made too. The origins of the new space boom, the X-prize in 2004, proved that reusable space craft could be built by private enterprise. Now the challenge is to work out how to run reliable, safe, affordable services that will show a return on the massive financial investments. Sixteen years since Dennis Tito became the first civilian in space, Cox explores the hardware and companies that are aiming to make daily tourist flights to space.

Beyond mass space travel, and even space mining and manufacturing, the dream of Elon Musk and others is true space exploration. His company, SpaceX, already delivers supplies to the International Space Station, and their next step is delivering astronauts too. But their true ambition is to ensure the survival of the human race by crossing our solar system and colonizing Mars in the next decade. Could commercial spaceflight companies eventually make us a space-faring civilization?

TUE 22:00 The First Men in the Moon (b00vfgw)

Mark Gatiss's adaptation of HG Wells's science fiction classic. July 1969, and as the world waits with bated breath for the Apollo astronauts to land on the moon, a young boy meets 90-year-old Julius Bedford. He's a man with an extraordinary story of how, way back in 1909, he got to the moon first, and, together with the eccentric Professor Cavor, discovered a terrifying secret deep beneath its seemingly barren surface.

TUE 23:30 Pompeii: The Mystery of the People Frozen in Time (b01rn6c2)

The city of Pompeii uniquely captures the public's imagination - in AD79 a legendary volcanic disaster left its citizens preserved in ashes to this very day. Yet no-one has been able to unravel the full story that is at the heart of our fascination - how did those bodies become frozen in time?

For the first time, the BBC has been granted unique access to these strange, ghost-like body casts that populate the ruins and, using the latest forensic technology, the chance to peer beneath the surface of the plaster in order to rebuild the faces of two of the people who were killed in this terrible tragedy.

Margaret Mountford turns detective to tell a new story at the heart of one of history's most iconic moments, as she looks at the unique set of circumstances that led to the remarkable preservation of the people of Pompeii. By applying modern-day forensic analysis to this age-old mystery, Margaret dispels the myths surrounding the events in AD79. She also explores the lives of the individuals who once lived in this vibrant and enigmatic city and recreates the last moments of the people caught up in this tragedy.

TUE 00:30 Egypt's Lost Queens (b04gnhv5)

Professor Joann Fletcher explores what it was like to be a woman of power in ancient Egypt. Through a wealth of spectacular buildings, personal artefacts and amazing tombs, Joann brings to life four of ancient Egypt's most powerful female rulers and discovers the remarkable influence wielded by women, whose power and freedom was unique in the ancient world.

Throughout Egypt's history, women held the title of pharaoh no fewer than 15 times, and many other women played key roles in running the state and shaping every aspect of life. Joann Fletcher puts these influential women back at the heart of our understanding, revealing the other half of ancient Egypt.

TUE 01:30 Aristotle's Lagoon (b00q0hh2)

In the 4th century BC the Greek philosopher Aristotle travelled to Lesbos, an island in the Aegean teeming, then as now, with wildlife. His fascination with what he found there, and his painstaking study of it, led to the birth of a new science - biology. Professor Armand Leroi follows in Aristotle's footsteps to discover the creatures, places and ideas that inspired the philosopher in his pioneering work.

TUE 02:30 How It Works (b01g98vb)

Ceramics

Professor Mark Miodownik traces the story of ceramics. He looks at how we started with simple clay, sand and rock and changed them into pottery, glass and concrete - materials that would allow us to build cities, transform the way we view our world and communicate at the speed of light. Deep within their inner structure Mark discovers some of ceramics' most intriguing secrets. He reveals why glass can be utterly transparent, why concrete continues to harden for hundreds of years and how cooling ceramics could transform the way we power cities of the future.

TUE 03:30 James May at the Edge of Space (b00lc5ph)

[Repeat of broadcast at 19:30 today]

WEDNESDAY 16 MAY 2018**WED 19:00 Beyond 100 Days (b0b2x4hx)**

Series 1

16/05/2018

The latest national and international news, exploring the day's events from a global perspective.

WED 19:30 History of the Future: Cars (b00j4dfw)

[Repeat of broadcast at 21:30 on Sunday]

WED 20:00 Cosmonauts: How Russia Won the Space Race (b04lcxms)

When Neil Armstrong stepped onto the moon in 1969, America went down in popular history as the winner of the space race. However, the real pioneers of space exploration were the Soviet cosmonauts.

This remarkable feature-length documentary combines rare and unseen archive footage with interviews with the surviving cosmonauts to tell the fascinating and at times terrifying story of how the Russians led us into the space age. A particular highlight is Alexei Leonov, the man who performed the first spacewalk, explaining how he found himself trapped outside his spacecraft 500 miles above the Earth. Scary stuff.

WED 21:00 The Last Man on the Moon (b0b3gd8g)

When Apollo astronaut Gene Cernan stepped on the moon in December 1972, he left his footprints and his daughter's initials in the lunar dust. This film takes Cernan back to the launchpads of Cape Kennedy to tell his story of burning ambition, fulfilment, love and loss. Using a wealth of rare archive, home movies, scrapbooks and interviews, it recounts how Cernan's burning ambition carried him from a quiet Chicago suburb to the spectacular and hazardous environment of space.

WED 22:30 Dam Busters Declassified (b00rb2g)

Martin Shaw takes a fresh look at one of the most famous war stories of them all. The actor, himself a pilot, takes to the skies to retrace the route of the 1943 raid by 617 Squadron which used bouncing bombs to destroy German dams. He sheds new light on the story as he separates the fact from the myth behind this tale of courage and ingenuity.

Using the 1955 movie The Dam Busters as a vehicle to deconstruct the raid, he tries to piece together a picture of perhaps the most daring attack in the history of aviation

warfare.

Along the way, Shaw hears from the last RAF veteran of the raid, as well as a German survivor of the tsunami which resulted from the Moehne dam's destruction.

WED 23:30 Planet Ant: Life Inside the Colony (p00scslp)

Ant colonies are one of the wonders of nature - complex, organised and mysterious. This programme reveals the secret, underground world of the ant colony in a way that's never been seen before. At its heart is a massive, full-scale ant nest, specially designed and built to allow cameras to see its inner workings. The nest is a new home for a million-strong colony of leafcutter ants from Trinidad.

For a month, entomologist Dr George McGavin and leafcutter expert Professor Adam Hart capture every aspect of the life of the colony, using time-lapse cameras, microscopes, microphones and radio tracking technology. The ants instantly begin to forage, farm, mine and build. Within weeks, the colony has established everything from nurseries and gardens to graveyards.

The programme explores how these tiny insects can achieve such spectacular feats of collective organisation. This unique project reveals the workings of one of the most complex and mysterious societies in the natural world and shows the surprising ways in which ants are helping us solve global problems.

WED 01:00 The Last Seabird Summer? (b072rpnw)

Living with the Birds

In episode one, Adam Nicolson follows the story of the seabirds on the Shiant Isles in the Outer Hebrides off the west coast of Scotland, one of the most important bird places of Europe. As the puffins, guillemots and razorbills arrive from far out in the north Atlantic, Adam traces our long history of dependence on seabirds - thousands of years of collecting eggs and hunting the birds for meat, oil and feathers.

But there is crisis in our seabird population - in the last 15 years in Scotland alone, 40 per cent have been lost. And although in Britain our relationship is now one of conservation, there are countries who still hunt the seabird. To understand how this tradition continues today, Adam travels to Iceland, home to over half the world's puffins, and meets those for whom the puffin hunt is still part of everyday life.

WED 02:00 Cosmonauts: How Russia Won the Space Race (b04lcxms)

[Repeat of broadcast at 20:00 today]

WED 03:00 History of the Future: Cars (b00j4dfw)

[Repeat of broadcast at 21:30 on Sunday]

THURSDAY 17 MAY 2018**THU 19:00 Beyond 100 Days (b0b2x4j2)**

Series 1

17/05/2018

The latest national and international news, exploring the day's events from a global perspective.

THU 19:30 The Sky at Night (b0b2xw15)

[Repeat of broadcast at 22:00 on Sunday]

THU 20:00 The Sky at Night (b0b3gxfk)

Guides

Planets

The planets have fascinated us for millennia, but over the past 60 years our understanding of them has been transformed. Using The Sky at Night archives, Maggie Aderin-Pocock takes us on a spectacular voyage of discovery through our exploration of the planets. From incredible technological achievements, to astonishing phenomena such as epic storms on Jupiter and the stunningly complex rings of Saturn, this is the definitive guide to the planets. And the journey doesn't end at the edges of our solar system. We're now discovering that the Milky Way is full of weird and wonderful exoplanets outside our own solar system. Yet the more we learn, the more we discover how special our own planet really is.

THU 21:00 Missions (b0b3969g)

Series 1

Ulysses

A European billionaire's venture to put the first people on Mars faces major crises on arrival, threatening to split an already fractious crew.

THU 21:25 Missions (b0b39hgp)

Series 1

Mars

To save their stricken craft a sub-team seeks salvage, but the trio's discovery of a body means a surprisingly harsh reception on their return.

THU 21:50 Horizon (b09574pc)

2017

Mars - A Traveller's Guide

The dream of sending humans to Mars is closer than ever before. In fact, many scientists think that the first person to set foot on the Red Planet is alive today. But where should the first explorers visit when they get there? Horizon has gathered the world's leading experts on Mars and asked them where they would go if they got the chance - and what would they need to survive?

Using incredible real images and data, Horizon brings these Martian landmarks to life - from vast plains to towering volcanoes, from deep valleys to hidden underground caverns. This film also shows where to land, where to live and even where to hunt for traces of extraterrestrial life.

This is the ultimate traveller's guide to Mars.

THU 22:00 NASA: Triumph and Tragedy (b00lg2xb)

One Small Step

In 2009, NASA celebrates the 40th anniversary of the first Moon landing. This documentary series offers audiences a unique chance to glimpse an astronaut's view of space flight. It is an epic story of heroes and their breathtaking successes as they further humanity's innate desire to explore.

To land a human being on another celestial body is the first step to living beyond our planet. The breathless pace and daring of the Apollo programme sees NASA master previously unimagined tasks in an attempt to achieve the most incredible accomplishment in the history of human endeavour.

From the ashes of tragedy on Apollo 1 emerges a determination that puts Apollo 8 in orbit around the Moon ahead of schedule. Apollo 9 and 10 each break bold new ground and pave the way for something few dared to believe was possible. When Neil Armstrong and Buzz Aldrin walk on the Moon and return safely to Earth, the whole planet throws them a party.

THU 23:00 Rise of the Continents (p019bct1)

Africa

Geologist Prof Iain Stewart shows how the continent of Africa was formed from the wreckage of a long lost supercontinent.

THU 00:00 Dissected (p01mv2md)

The Incredible Human Hand

In a purpose-built dissection lab, Dr George McGavin is joined by leading anatomy experts to dissect a real hand, taking it apart layer by layer to reveal what makes it unique in the animal kingdom. We discover what gives our hands an unrivalled combination of power and precision, and meet people who use their hands in extraordinary ways - from magicians to rock climbers - to discover what gives them such astonishing abilities.

THU 01:00 The Last Seabird Summer? (b072wvv9)

Trouble at Sea

Picking up the birds' progress in July, Adam finds the Shiant colonies to be healthy and the puffins, guillemots and razorbill bringing in great bill-fulls of gleaming silver fish for their chicks. But elsewhere, the sea is failing to provide the birds with the food they need to survive.

In Scotland alone, 40 per cent of the birds have been lost and, further afield in Iceland, Adam sees colonies where nearly all the birds have been wiped out. He discovers how puffin hunters respond to the crisis and talks to both local people and experts about what could lie behind the catastrophic seabird declines. With the help of leading ornithologists and marine scientists, he begins to reveal an unexpected picture of the global forces driving the crisis, and the possible future for our seabird world.

THU 02:00 The Sky at Night (b0b3gfkx)

[Repeat of broadcast at 20:00 today]

THU 03:00 NASA: Triumph and Tragedy (b00lg2xb)

[Repeat of broadcast at 22:00 today]

FRIDAY 18 MAY 2018

FRI 19:00 Beyond 100 Days (b0b4fj6l)

Series 1

18/05/2018

The latest national and international news, exploring the day's events from a global perspective.

FRI 19:30 Top of the Pops (b0b23fcv)

Simon Bates and Peter Powell present the pop chart programme, first broadcast on 19 September 1985. Featuring Red Box, Madonna, Lloyd Cole & The Commotions, and David Bowie & Mick Jagger.

FRI 20:00 Tap America: How a Nation Found Its Feet (b0b396jx)

Clarke Peters, the writer of Five Guys Named Moe and actor in the likes of The Wire and Three Billboards, explores the origins, development and modern significance of the great American vernacular art form he has loved since a child – tap dancing.

From 17th century accounts of the dances performed by African slaves on American soil to celebrated 19th century dance-offs and contests between Irish and African-American dancers, through to the troubled Hollywood heyday of tap in the 1930s and 40s when black dancers were routinely excluded from the film roles their talent deserved.

The Hollywood Greats like Fred Astaire actually owed much of their style to the craft and innovation of unsung black performers such as John Bubbles, Bill Bojangles Robinson, The Nicholas Brothers and Baby Laurence. In the painful years of the 'Great Tap Drought' when audiences abruptly fell out of love with the dance after World War Two – depriving a generation of talented tap dancers of their livelihood. From the 1950s to the 1970s, tap was almost single-handedly kept alive in the mainstream by the genius of Sammy Davis Jr.

Clarke explores the fascinating story of the 'Tap Revival' of the early 1980s – spearheaded by the legendary Gregory Hines – and finds out how tap was made modern again, culminating in the hip-hop-inspired hoofing of Savion Glover and beyond. He ends his journey by meeting some of the biggest stars on today's tap scene, such as Michelle Dorrance and Chloe Arnold's Syncopated Ladies (who happen to be Beyoncé's favourite tap ensemble)!

FRI 21:25 David Bowie and the Story of Ziggy Stardust (b01k0y0n)

The Rise and Fall of Ziggy Stardust and the Spiders from Mars is arguably the most important album in the mind-blowing career of David Bowie. Released in 1972, it's the record that set the mercurial musician on course to becoming one of the best-known pop stars on the planet. In just over a year, Bowie's messianic Martian invaded the minds of the nation's youth with a killer combination of extraterrestrial rock 'n' roll and outrageous sexuality, all delivered in high-heeled boots, multicoloured dresses and extravagant make-up. In Bowie's own words, Ziggy was 'a cross between Nijinsky and Woolworths', but this unlikely culture clash worked - Ziggy turned Bowie into stardust.

This documentary tells the story of how Bowie arrived at one of the most iconic creations in the history of pop music. The songs, the hairstyles, the fashion and the theatrical stage presentation merged together to turn David Bowie into the biggest craze since the Beatles. Ziggy's instant success gave the impression that he was the perfectly planned pop star. But, as the film reveals, it had been a momentous struggle for David Bowie to hit on just the right formula that would take him to the top.

Narrated by fan Jarvis Cocker, it reveals Bowie's mission to the stars through the musicians and colleagues who helped him in his unwavering quest for fame - a musical voyage that led Bowie to doubt his true identity, eventually forcing the sudden demise of his alien alter ego, Ziggy.

Contributors include Trevor Bolder (bass player, Spiders from Mars), Woody Woodmansey (drummer, Spider from Mars), Mike Garson (Spiders' keyboardist), Suzi Ronson (Mick Ronson's widow, who gave Bowie that haircut), Ken Scott (producer), Elton John (contemporary and fan), Lindsay Kemp (Bowie's mime teacher), Lee Black Childers (worked for Mainman, Bowie's production company), Cherry Vanilla

(Bowie's PA/press officer), George Underwood (Bowie's friend), Mick Rock (Ziggy's official photographer), Steve Harley, Marc Almond, Holly Johnson, Peter Hook, Jon Savage, Peter Dinklage and Dylan Jones.

FRI 22:25 The Genius of David Bowie (b01k0y0q)

A selection of some of David Bowie's best performances from the BBC archives, which also features artists who Bowie helped along the way, such as Mott the Hoople, Lulu, Iggy Pop and Lou Reed.

FRI 23:25 Top of the Pops (b0b23fcv)

[Repeat of broadcast at 19:30 today]

FRI 23:55 The Bee Gees at the BBC... and Beyond (b04v8679)

Classic Bee Gees studio performances from the BBC and beyond including all the big hits, rare 60s performances from European TV, including a stunning I Started a Joke, a rarely seen Top of the Pops performance of World, the big hits of the 70s and some late performances from the 90s, with the brothers Gibb in perfect harmony.

FRI 00:55 Rod Stewart at the BBC (b03m81n5)

Compilation of Rod Stewart's finest performances at the BBC.

We revisit the early 70s with The Faces performing Stay with Me and Three Button Hand Me Down on Sounds for Saturday. The BBC charted Rod's solo success over the years and there are classic performances and interviews that will make you dance, sing and pull on your heartstrings. Songs include Sailing, You're in My Heart, I Don't Want to Talk about It and Do Ya Think I'm Sexy?

We also have Rod's performance from Glastonbury 2002 of the classic Handbags and Gladrag, and we dip into the Great American Songbook with his version of the Dorothy Fields classic I'm in the Mood for Love. Finally, rounding off over five decades in music is a performance from Rod's Radio 2 concert from May 2013.

FRI 01:55 David Bowie and the Story of Ziggy Stardust (b01k0y0n)

[Repeat of broadcast at 21:25 today]

FRI 02:55 The Genius of David Bowie (b01k0y0q)

[Repeat of broadcast at 22:25 today]