

SATURDAY 14 NOVEMBER 2015

SAT 19:00 Lost Land of the Tiger (b00ty6b0)
Episode 1

Documentary series following a dramatic expedition searching for tigers hidden in the Himalayan Kingdom of Bhutan.

With tigers heading for extinction, an international team of big-cat experts and wildlife film-makers are given unique access to the jungles and mountains of Bhutan for what could be the last chance to save this magnificent animal.

Explorer Steve Backshall is joined by sniffer dog Bruiser - together, they hunt for tigers through the dense forest undergrowth. High in the mountains, wildlife cameraman Gordon Buchanan drives himself to exhaustion tracking tigers that seem as elusive as the yeti. And in a jungle base camp, scientist George McGavin organises a firefly disco, while camerawoman Justine Evans is stuck at the top of a tree during a tropical lightning storm.

For the final team member, big-cat biologist Alan Rabinowitz, time to save the tiger is running out, as he has been diagnosed with incurable leukaemia. Alan bugs the forest with remote cameras to capture whatever secretive creatures are lurking there, but ultimately he needs to find tigers if his ambitious plan to protect them across the Himalayas is to succeed.

We follow the expedition every emotional step of the way as they strive to find evidence that could help to bring wild tigers back from the brink of extinction and safeguard their future.

SAT 20:00 Horizon (b0148vph)
2011-2012

The Core

For centuries we have dreamt of reaching the centre of the Earth. Now scientists are uncovering a bizarre and alien world that lies 4,000 miles beneath our feet, unlike anything we know on the surface. It is a planet buried within the planet we know, where storms rage within a sea of white-hot metal and a giant forest of crystals make up a metal core the size of the moon.

Horizon follows scientists who are conducting experiments to recreate this core within their own laboratories, with surprising results.

SAT 21:00 Arne Dahl (b05pr225)
Series 2

Eye in the Sky: Part One

A woman is found collapsed in the street, having escaped from an unknown basement. She has no idea why she was kidnapped and, with nothing else to go on, 'A' Unit follow a lead found in the basement to a drugs ring run by two brothers.

In Swedish with English subtitles.

SAT 22:00 Arne Dahl (b05qkkf0)
Series 2

Eye in the Sky: Part Two

Investigating a series of murders and kidnaps, 'A' Unit begin to suspect they are linked to a shared high school experience - but this still isn't getting them any closer to catching the killer. Paul is investigating the sudden and mysterious death of his new-found friend from the security service.

In Swedish with English subtitles.

SAT 23:00 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 Gladrags, 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.

SAT 00:00 Radio 2 Live (b06pf5dw)
Hyde Park Headliners

Rod Stewart Live at Hyde Park

On a sunny day in September 2015, Rod Stewart took to the stage in London's Hyde Park to bring to a close BBC Radio 2's annual Festival in a Day. In front of 50,000 people, Rod delivered not his usual stadium set but a bespoke selection of hits from his back catalogue spanning his career, including Gasoline Alley, Angel, In a Broken Dream and The Killing of Georgie (Part 1 & 2), plus Faces classics such as Ooh La La and the blues standard Rollin' and Tumblin', a number that Rod used to perform with Long John Baldry back in the day. To close the set, Rod brought on his old pal guitarist Jim Cregan to help him perform his 1978 hit I Was Only Joking.

All in all, a memorable and unique concert that is unlikely to be repeated anytime soon.

SAT 01:00 Top of the Pops (b018zv8d)
1977 - Big Hits

The celebration of Top of the Pops 1977 continues with a selection of outstanding complete archive performances from Britain's silver jubilee year. 1977 was dominated by funk and punk, with Heatwave's Boogie Nights and The Stranglers' No More Heroes in the top ten. Classic top of the charts hits included Baccara's Yes Sir, I Can Boogie and Angelo by Brotherhood of Man. Some of the enduring heroes to take to the stage that year were David Bowie, Rod Stewart, Queen and Elvis Costello, with rare studio performances from The Jacksons and Bob Marley & The Wailers.

SAT 02:00 Singer-Songwriters at the BBC (b015j8g7)
Series 2

Episode 2

The celebration of the singing songwriting troubadours of the 1960s and 70s continues with a further trawl through the BBC archives for timeless and classic performances.

Tom Paxton starts proceedings with a rare black and white performance of his classic song The Last Thing on My Mind filmed in 1964. Also making an appearance is the 'fifth Beatle', Harry Nilsson, with a performance from his BBC concert in 1972. Other gems from this year include Canadian Gordon Lightfoot, songwriting duo Gerry Rafferty and Joe Egan as Stealers Wheel and the most popular acoustic act of the 1970s, the gentle, bespectacled John Denver.

From the Basil Brush Show in 1973, Ronnie Lane and Slim Chance make a surprise appearance. Californian Beach Boy Bruce Johnston offers a sublime version of Disney Girls, and Joan Armatrading injects a bit of brio on the Old Grey Whistle Test. Rounding it all off is six-time Grammy winner Billy Joel.

SAT 03:00 Lost Land of the Tiger (b00ty6b0)
[Repeat of broadcast at 19:00 today]

SUNDAY 15 NOVEMBER 2015

SUN 19:00 The Fairytale Castles of King Ludwig II with Dan Cruickshank (b036f9vc)

Ludwig II of Bavaria, more commonly known by his nicknames the Swan King or the Dream King, is a legendary figure - the handsome boy-king, loved by his people, betrayed by his cabinet and found dead in tragic and mysterious circumstances. He spent his life in pursuit of the ideal of beauty, an ideal that found expression in three of the most extraordinary, ornate architectural schemes imaginable - the castle of Neuschwanstein and the palaces of Linderhof and Herrenchiemsee. Today, these three buildings are among Germany's biggest tourist attractions.

In this documentary, Dan Cruickshank explores the rich aesthetic of Ludwig II - from the mock-medievalism of Neuschwanstein, the iconic fairytale castle that became the inspiration for the one in Walt Disney's Sleeping Beauty, to the rich Baroque splendour of Herrenchiemsee, Ludwig's answer to Versailles. Dan argues that Ludwig's castles are more than flamboyant kitsch and are, in fact, the key to unravelling the eternal enigma of Ludwig II.

SUN 20:00 Mark Lawson Talks To... (b06pp9ht)
David Hare

Award-winning writer and director Sir David Hare talks frankly to Mark Lawson following the publication of his much-anticipated memoir The Blue Touch Paper. Hare, one of Britain's foremost political playwrights, rose to fame in the 1970s with Plenty, his play about post-war disillusion. He then went on to write a string of successes for the National Theatre, most notably his 1990s state-of-the-nation trilogy. Hare has also written screenplays including The Hours and The Reader and

recently wrote and directed the political thriller The Worricker Trilogy for TV.

SUN 21:00 On Stage: Live from Television Centre (b06pyvhl)

The BBC hands over the airwaves for an evening of unpredictable and entertaining live theatre, produced by Battersea Arts Centre in partnership with Arts Council England. Kirsty Wark introduces four 30-minute theatre shorts featuring comedy, dance and drama from some of the UK's most exciting theatre-makers as they bring live performance back to the old BBC TV HQ for the first time since its closure.

Internationally-acclaimed theatre company Gecko perform the visually striking and arresting The Time of Your Life, about one man's struggle against the system.

In The Redux Project, Richard DeDomenici recreates clips from the BBC's back catalogue, from memorable Top of the Pops moments to Blue Peter disasters.

Bradford-based Common Wealth presents No Guts, No Heart, No Glory, based on real-life interviews with Muslim female boxers.

The night finishes with Touretteshero's Broadcast from Biscuit Land, performed by Jess Thom, an artist with Tourette's syndrome, whose unique neurology makes her say 'biscuit' 16,000 times a day. She leads us to a surreal and comic musical finale featuring a choir, a brass band and dancing biscuits.

SUN 23:00 Blood and Glitter: 70 Years of the Citizens Theatre (b06f2jgd)

In September 2015, the innovative Citizens Theatre in Glasgow marked its 70th anniversary. Blood and Glitter looks back at seven decades of pioneering productions and goes behind the scenes as the 'Citz' brings classics including The Slab Boys and Lanark to the stage.

Featuring contributions from some of our most successful stage and screen actors, including Mark Rylance, Glenda Jackson, Pierce Brosnan, Ciaran Hinds, Gary Oldman, Bill Paterson, Roberta Taylor and Blythe Duff.

SUN 00:00 Lost Land of the Tiger (b00ty6b0)
[Repeat of broadcast at 19:00 on Saturday]

SUN 01:00 Timeshift (b03fv7sl)
Series 13

Full Throttle: The Glory Days of British Motorbikes

Timeshift returns with an exploration of the British love of fast, daring and sometimes reckless motorbike riding during a period when home-grown machines were the envy of the world. From TE Lawrence in the 1920 to the 'ton-up boys' and rockers of the 1950s, motorbikes represented unparalleled style and excitement, as British riders indulged their passion for brands like Brough Superior, Norton and Triumph.

But it wasn't all thrills and spills - the motorbike played a key role during World War II and it was army surplus bikes that introduced many to the joy and freedom of motorcycling in the 50s, a period now regarded as a golden age. With its obsession with speed and the rocker lifestyle, it attracted more than its fair share of social disapproval and conflict.

Narrated by John Hannah.

SUN 02:00 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.

SUN 03:00 Mark Lawson Talks To... (b06pp9ht)
[Repeat of broadcast at 20:00 today]

MONDAY 16 NOVEMBER 2015

MON 19:00 World News Today (b06pjims)

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

MON 19:30 On Stage (b06ns499)

Frinton-on-Sea

Actor Richard Wilson follows the fortunes of the tiny Essex theatre that's launched some of the biggest stars of British stage and screen. Run in the village hall at Frinton-on-Sea in Essex, the Summer Theatre is the country's oldest weekly repertory company and has helped start the careers of a host of stars, including Antony Sher and Lynda Bellingham. But it needs to change if it's to survive. This year, the theatre has a new producer who is risking his own money on a mission to modernise this time-honoured institution. Can he succeed?

MON 20:00 The Secret Life of Books (b06pm5v9)

Series 2

Swallows and Amazons

Former journalist and keen amateur sailor John Sergeant takes to the water in the wake of the plucky young heroes of Arthur Ransome's Swallows and Amazons, and learns how a globe-trotting foreign correspondent and acquaintance of Lenin and Trotsky came to perfect a new, more authentic kind of children's literature that featured real children doing real things in real places.

MON 20:30 The Quizeum (b06pm5vc)

Series 2

Episode 3

At the London branch of the Imperial War Museum in Lambeth, founded in 1917 to tell the story of those whose lives have been shaped by war from the First World War to the present day, the experts being put to the test are: historian specialising in European and Chinese ceramics Lars Tharp, historian and broadcaster Kate Williams, trail-blazing war correspondent Kate Adie, and author and war studies academic Dr Spencer Jones.

MON 21:00 Timeshift (b06pm5vf)

Series 15

How Britain Won the Space Race: The Story of Bernard Lovell and Jodrell Bank

The unlikely story of how one man with some ex-WWII army equipment eventually turned a muddy field in Cheshire into a key site in the space race. That man was Bernard Lovell, and his telescope at Jodrell Bank would be used at the height of the Cold War by both the Americans and the Russians to track their competing spacecraft. It also put Britain at the forefront of radio astronomy, a new science which transformed our knowledge of space and provided the key to understanding the most mind-bending theory of the beginnings of the universe - the Big Bang.

MON 22:00 Storyville (b06pyw3w)

Orion: The Man Who Would Be King

Documentary telling the wonderfully weird story of Jimmy Ellis - an unknown singer plucked from obscurity and thrust into the spotlight, as part of a crazy scheme that had him masquerade as Elvis back from the grave.

With an outlandish fictional identity, the backing of the legendary birthplace of rock 'n' roll Sun Records, and a voice that seemed to be the very twin of Presley's, the scheme - concocted in the months after Presley's death - exploded into a cult success and the 'Elvis is alive' myth was launched.

Jimmy - as the masked and rhinestoned Orion - gained the success he'd always craved, the women he'd always desired and the adoration of screaming masses, but it wasn't enough.

The film explores the manipulative schemes of the music industry, the allure of fantasy and the search for identity. It offers a dizzying analysis of the madness of the Orion myth alongside a movingly sympathetic account of Ellis's unsung talent.

MON 23:25 Detectorists (b06111t)

Series 2

Episode 1

Andy's been thinking about internet dating. Not for him, but for his friend Lance who's still not over the departure of his ex-wife. A mysterious stranger arrives to tempt the Danebury

Metal Detecting Club in more ways than one.

MON 23:50 Detectorists (b06n9q3h)

Series 2

Episode 2

Andy spots something suspicious and Sophie's cracking on with her new friend at the library. The club is visited by the local mayor on a matter of some delicacy, and some old enemies seem unusually interested in Peter's quest to find his grandfather.

MON 00:20 Detectorists (b06nxyd8)

Series 2

Episode 3

Russell and Hugh embark on their mission to recover the mayor's chain of office from the car park in Barnfather Woods, while Sophie proves she's still very bad at spying. Both Becky and Lance have something important to tell Andy.

MON 00:50 Wild Weather with Richard Hammond (b04v5lmg)

Original Series

Water: The Shape Shifter

Richard Hammond investigates the crucial role water plays. Without water there would be almost no weather: no rain, no snow, no hail, no clouds. So Richard goes in pursuit of water in all its forms. He tries to weigh a cloud, finds out how rain could crush a car, and gets involved in starting an avalanche.

Along the way, he tries to find out why clouds float by building his own cloud with the aid of a cattle trough, some humidifiers and atmospheric scientist Dr Jim McQuaid. But will their cloud float in the air like a real cloud?

He also drops in on renowned hail scientist Charles Knight in his lab in Boulder, Colorado, to discover that there is far more to hail than meets the eye. In a scientific first, and with the help of Jim Stratton and Craig Zehrung from Purdue University, Richard sets about firing ice and hail at a board to find out which does the most damage.

Finally, in conjunction with the WSL Institute for Snow and Avalanche Research SLF in Davos, Richard joins Walter Steinkogler as he starts an avalanche in an attempt to find out how something as delicate and fragile as a snowflake can travel at extraordinary speeds of up to 250mph on the ground.

MON 01:50 The Quizeum (b06pm5vc)

[Repeat of broadcast at 20:30 today]

MON 02:20 Britain on Film (b021270b)

Series 2

Times of Change

In 1959 Britain's biggest cinema company, the Rank Organisation, decided to replace its newsreels with a series of short, quirky, topical documentaries that examined all aspects of life in Britain. During the 1960s - a decade that witnessed profound shifts across Britain's political, economic and cultural landscapes - many felt anxiety about the dizzying pace of change.

Look at Life reflected the increasing social and moral unease in films that tackled subjects ranging from contraception to immigration, from increasing stress at work to the preservation of the Sabbath, and from the environmental implications of waste management to the threat of nuclear weapons. Through these films, we can glimpse many of the seismic societal transformations of the Sixties developments that polarised the nation and changed life in Britain forever.

MON 02:50 Timeshift (b06pm5vf)

[Repeat of broadcast at 21:00 today]

TUESDAY 17 NOVEMBER 2015

TUE 19:00 World News Today (b06pjjn0)

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

TUE 19:30 On Stage (b06ns4fh)

At the York Theatre Royal

York Theatre Royal is going through a major refurbishment, but will an important archaeological find delay the opening of the legendary pantomime? Meanwhile, the theatre plans a community production with hundreds of amateur actors while building a thousand-seat temporary theatre at York's National Railway Museum. Narrated by Derek Jacobi.

TUE 20:00 The Fisherman's Apprentice with Monty Halls (b01d0x17)

Episode 1

Cadgwith on the south coast of Cornwall is one of the last traditional fishing coves in the UK. Small boats are launched off the beach as they have been since medieval times. Marine biologist Monty Halls travels down to Cadgwith to live and work as a fisherman, to find out what's really involved in getting seafood onto our plates. As his apprenticeship continues, he learns more about the situation facing our traditional fishing fleet.

TUE 21:00 Power to the People (b06q4z6j)

Keeping the Lights On

We take electricity for granted - never giving a second thought to how it's made. In this observational documentary series, one of Britain's controversial Big Six energy companies, SSE, has let the cameras in. Filmed over a year, this is the surprising story of an army of workers battling to keep our power flowing.

It's a battle that matters to all of us, with future blackouts possible. Once, we had a healthy surplus of electricity, but now, as we close down old power stations, the margin between what we generate and what we use is smaller than ever. This episode goes inside one of Britain's biggest - and oldest - power stations, Ferrybridge C in West Yorkshire, as it struggles to stay switched on.

Ferrybridge once produced almost 5 per cent of the entire nation's power, but as a coal-fired plant, the future for the power station - and its 180 staff - is now uncertain.

Ken Valentine is the maintenance controller, and has worked at Ferrybridge for more than 30 years. 'When I retire and leave here, I want this place to keep going,' he says. 'Because it's an asset to the country. It makes electricity and the world runs on it, doesn't it?'

But Ferrybridge is hit first by a fire, and then misses out on a crucial contract. The company's chief executive, Alistair Phillips-Davies, faces a decision. 'I think the writing's on the wall for UK coal,' he admits.

Meanwhile, we follow technicians being flown out by helicopter to the company's latest big-ticket investment - the world's second largest offshore wind farm. Greater Gabbard, a £1.7 billion array of 140 wind turbines, fifteen miles off the Suffolk coast. Ken Valentine isn't impressed though. 'Wind's great, but it's not windy all the time, is it?' he says.

With coal stocks running low at Ferrybridge, and the maintenance budget being cut, can the power station keep pumping out the electricity we need, or will it be switched off for good? And if it's closed down, can we keep the lights on?

TUE 22:00 Shock and Awe: The Story of Electricity (p00kjq6h)

Spark

Professor Jim Al-Khalili tells the electrifying story of our quest to master nature's most mysterious force - electricity. Until fairly recently, electricity was seen as a magical power, but it is now the lifeblood of the modern world and underpins every aspect of our technological advancements.

Without electricity, we would be lost. This series tells of dazzling leaps of imagination and extraordinary experiments - a story of maverick geniuses who used electricity to light our cities, to communicate across the seas and through the air, to create modern industry and to give us the digital revolution.

Episode one tells the story of the very first 'natural philosophers' who started to unlock the mysteries of electricity. They studied its curious link to life, built strange and powerful instruments to create it and even tamed lightning itself. It was these men who truly laid the foundations of the modern world. Electricity was without doubt a fantastical wonder. This is the story about what happened when the first real concerted effort was made to understand electricity - how we learned to create and store it, before finally creating something that enabled us to make it at will - the battery.

TUE 23:00 Maps: Power, Plunder and Possession (b00s96gn)

Mapping the World

In the last of a three-part series about the extraordinary stories behind maps, Professor Jerry Brotton uncovers how maps are snapshots of a moment in history and offer visions of distant lands, tempting explorers to plunder and conquer.

However, adventurers first had to tackle the great challenge of mapping the globe onto a flat surface. There is no perfect solution, but the father of geography, Claudius Ptolemy, had some clever ideas.

Explorers like Christopher Columbus sailed into the unknown in search of riches and discovered a whole new continent that would become the most powerful on earth, while Amerigo Vespucci gave it his name.

Sir Walter Raleigh's treasure map of El Dorado in South America ultimately lost him his head. But the myth of El Dorado lived on, sending hundreds of men to their death in fruitless attempts to find the golden city.

As navigation became easier, maps enabled nations and enterprises like the Dutch East India Company to plunder far-off territories for spices, natural resources and gold. Even today, a project to map the North Pole is the flashpoint for the so-called 'Cold Rush' - the dash to exploit oil, gas and mineral reserves as the Arctic ice melts.

TUE 00:00 Secrets of the Universe: Great Scientists in Their Own Words (b04ndw2j)

Film telling the story of the greatest physicists of the 20th century and the discoveries they made, told in their own words. Men and women who transformed our understanding of the universe, from unlocking the secrets of the atom to solving the mysteries of the cosmos.

Revealing archive provides a unique insight into the lives and personalities of a cast of complex characters, eccentric geniuses and fantastic showmen who had to overcome personal struggles and intense rivalries before they could succeed. The film reveals the human side of scientific endeavour and shows how the great advances in our understanding of the cosmos depended on the character and personality of the scientists who made them, as much as on their intellectual abilities.

TUE 01:00 Natural World (b01lb4vn)
2012-2013

Tiger Island

Jungle tigers are turning into man-eaters in the exotic island of Sumatra. Now a maverick millionaire is catching the killers and releasing them on his land. Is this madness, or could it save them from extinction?

TUE 02:00 The Secret Life of Elephants (b00gv19w)
The Secret Life of Elephants

Second in a series of three programmes revealing the emotional and dramatic lives of elephants in Kenya's Samburu reserve.

Baby elephant Breeze is growing up fast, but with the dry season approaching, she is about to face her biggest test yet. Meanwhile, Breeze's teenage brother Buster seems intent on getting himself and Breeze into trouble.

Outside the reserve, more trouble is brewing as people and elephants come into conflict. Elephant expert Iain Douglas-Hamilton sends daughter Saba on a mission to help one of their best-known elephants - Mountain Bull - who is on a collision course with farmers and villagers.

Elsewhere, a marauding group of bulls cause havoc by breaking into fields and raiding crops. The team think they might have an unusual solution and will need the help of some African honey bees.

Back in the reserve, a devastating drought takes hold and Breeze and her family are forced to compete with other elephants for food and water. Will baby Breeze survive these hard times?

TUE 03:00 Power to the People (b06q4z6j)
[Repeat of broadcast at 21:00 today]

WEDNESDAY 18 NOVEMBER 2015

WED 19:00 World News Today (b06pjjn5)
The latest national and international news, exploring the day's events from a global perspective.

WED 19:30 Timothy Spall: All at Sea (b01c152j)
Message in a Bottle

Timothy Spall and his wife Shane are back on board their beloved barge the Princess Matilda as they conclude their trip around the British coast.

Tim takes on Rattray Head in the face of a huge storm. This is the equivalent of Land's End for Scotland and the point where they head south for the first time. The North Sea soon becomes the new enemy as he and Shane struggle to cope with this unrelenting force of nature.

On land they find wonderful Scottish towns - Peterhead, Eyemouth and Stonehaven - but it is the town of Banff that resonates most. They fall in love with it and are sad to leave it behind as they pursue their odyssey of circumnavigating Britain. At the end of the episode, they eventually reach the English sea border, where they launch a message in a bottle.

WED 20:00 At Home with the Georgians (b00wtwfk)
Safe as Houses

In this final part of the series about how the British obsession with our homes began 300 years ago, historian Amanda Vickery uses sources, from intimate diaries to Old Bailey records, to reveal how the 18th-century home was constantly under threat from theft, fire, divorce, poverty, illness, old age and death.

Georgian houses may seem like sanctuaries of calm elegance to us today, but at the time they were noisy chaotic places bursting with extended families, servants and lodgers and threatened by the lawlessness of Georgian streets. How did the Georgians make their houses havens of safety and security? How did the Englishman fight to make his home his castle?

WED 21:00 Colour: The Spectrum of Science (b06pm718)
Beyond the Rainbow

We live in a world ablaze with colour. Rainbows and rainforests, oceans and humanity, earth is the most colourful place we know of. But the colours we see are far more complex and fascinating than they appear. In this series, Dr Helen Czerski uncovers what colour is, how it works, and how it has written the story of our planet.

The colours that we see are only a fraction of what's out there. Beyond the rainbow there are colours invisible to our eyes. In this episode, Helen tells the story of scientific discovery. To see the universe in a whole new light, she takes to the skies in a NASA jumbo jet equipped with a 17-tonne infrared telescope.

We can't see in ultraviolet, but many animals can. Helen explores what the world looks like to the birds and the bees. With the discovery of x-rays we could look inside ourselves in ways that previously had only been possible after death. Today those same x-rays allow us to examine life at the atomic level, helping to develop new drugs and better materials. Ultimately, by harnessing all the colours there are, researchers are beginning to image the human body as never before, revealing new ways to treat disease.

WED 22:00 Wild Weather with Richard Hammond (b04vr2p4)
Original Series

Temperature: The Driving Force

Richard Hammond investigates the crucial role temperature plays in all weather. Without heat, there would be no weather - no clouds, no rain, no snow, no dust storms, no thunder and lightning.

Richard sets off to find out about hot air and with the help of a quarry and a massive hot plate discovers just why it is so hard to pull a sword out of snow. He discovers, by building his own massive dust storm with the help of a few friends and dust specialist Dr Nigel Tapper, just how sand from the Sahara bounces its way to the UK.

In Canada he creates his own ice storm. He also drops in on Dan Morgan, who creates lightning bolts in his lab, where Richard is able to see thunder and hear lightning with the aid of some special cameras, light bulbs and a few candles.

WED 23:00 Catching History's Criminals: The Forensics Story (p0214pjs)
A Question of Identity

Sherlock has his mind palace, Morse his music - every detective has an edge. For most, it's forensic science. This three-part series provides a rare and fascinating insight into the secret history of catching murderers, charting two centuries of the breakthroughs that have changed the course of justice. Surgeon and writer Gabriel Weston explores this rich history through some of the most absorbing, and often gruesome, stories in the forensic casebook - and looks ahead to how forensics will continue to solve the murders of the future.

The first episode looks at the difficulty of identifying the body in a murder case. The question of identity is a crucial start to the investigation. From charred bones to bodies completely dissolved in acid, with each horrific new case science has had to adapt to identify both the victim and the murderer. Investigating four breakthrough cases, Gabriel reveals the scientific innovations that tipped the scales of justice in favour of the detective - and caught the killers.

Firstly, Gabriel investigates the use of teeth and bite marks to identify a victim or murderer, starting with a problematic case at Harvard Medical School in 1849. Next, she traces the use of entomology (the study of insects) to pinpoint the time of death - a crucial piece of evidence that helped identify both the killer and his victims when a gruesome collection of unidentifiable body parts was discovered in a river in Moffat in 1935.

Gabriel meets Professor Sir Alec Jeffreys, the geneticist who pioneered the technique of DNA profiling. Initially used to establish paternity in an immigration dispute, the application of this revolutionary discovery to the field of criminal investigation was soon established. In 1986 it led to a world first - a person caught and convicted solely on the basis of DNA evidence.

Taking us right to the cutting edge of forensics, Gabriel then experiments with a new technique in development - molecular face fitting, which uses only a person's DNA to create an image of their face.

WED 00:00 High Flyers: How Britain Took to the Air (b00nmlz3)

Documentary which tells the story of the golden age of British aviation and of how the original 'jet set' shaped air travel for generations to come. In Britain in the 1920s and '30s a revolution took place that would change forever our perspective on the world. While the country was in the grip of recession, dashing pilots and daring socialites took to the air, pushed back boundaries and forged new links across the globe. The era of commercial air travel was born.

WED 01:00 The Fisherman's Apprentice with Monty Halls (b01d0x17)

[Repeat of broadcast at 20:00 on Tuesday]

WED 02:00 Shock and Awe: The Story of Electricity (p00kj66b)

[Repeat of broadcast at 22:00 on Tuesday]

WED 03:00 Colour: The Spectrum of Science (b06pm718)

[Repeat of broadcast at 21:00 today]

THURSDAY 19 NOVEMBER 2015

THU 19:00 World News Today (b06pjjnb)

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

THU 19:30 Top of the Pops (b06pm83p)

Tommy Vance presents the pop show. Includes performances from Showaddywaddy, Robert Palmer, Stray Cats, UB40, ABBA, Madness and Spandau Ballet, plus a dance routine from Legs and Co.

THU 20:00 Unnatural Histories (b0122njp)

Amazon

The Amazon rainforest is the epitome of a last great wilderness under threat from modern man. It has become an international cause celebre for environmentalists as powerful agricultural and industrial interests bent on felling trees encroach ever deeper into virgin forest. But the latest evidence suggests that the Amazon is not what it seems.

As more trees are felled, the story of a far less natural Amazon is revealed - enormous man-made structures, even cities, hidden for centuries under what was believed to be untouched forest. All the time archaeologists are discovering ancient, highly fertile soils that can only have been produced by sophisticated agriculture far and wide across the Amazon basin. This startling evidence sheds new light on long-dismissed accounts from the very first conquistadors of an Amazon teeming with people and threatens to turn our whole notion of wilderness on its head. And if even the Amazon turns out to be unnatural, what then for the future of wilderness?

THU 21:00 Tankies: Tank Heroes of World War II (b01pvbds)

Episode 1

The Second World War was the ultimate conflict of the machine age, and the tank was its iconic symbol. The 'tankies' who fought inside had experience of much of the conflict from the fall of France to the deserts of Africa, from the invasion of Italy to D-Day, and on to the final victory in Germany.

In this two-part series, historian, BBC diplomatic editor and former officer in the Royal Tank Regiment, Mark Urban tells the story of six remarkable men from one armoured unit - the Fifth Royal Tank Regiment, also known as the Filthy Fifth.

Using first-hand testimony from the last surviving veterans alongside previously unseen letters and diaries, Mark brings the story of an extraordinary 'band of brothers' to life, in visceral detail. At the same time he analyses the evolution of tank production in Britain and illustrates how we fell far behind our German enemies in both technology and tactics, relying instead on dogged determination and a relentless drive to victory, whatever the costs.

In part one, Mark begins his journey in northern France, introducing our band of brothers in the midst of the fall of France and the retreat to Dunkirk. Characters such as 'rookie' tank driver Gerry Solomon join veterans, themselves still only in their twenties, such as and Jake Wardrop and Harry Finlayson.

Mark then follows in the tankies' footsteps across the deserts of North Africa. Here he looks at the game-changing tank battles of Sidi Rezegh, Alam Halfa and, of course, the battle that changed the course of the Second World War - Alamein. He then takes us back to England where the tankies expect a well-earned rest, instead they are confronted with the news that as battle-hardened troops they must fight again, this time on the beaches of Normandy.

With spectacular archive footage, including rarely seen colour footage, it brings to life the Second World War from a unique point of view.

THU 22:00 Detectorists (b06pm901)
Series 2

Episode 4

Andy suddenly has a job interview to go to, while Lance has a lot of catching up to do. The mystery of the buried bomber is the least of their problems, but a disturbing possibility emerges from an unlikely source that throws everything into doubt.

THU 22:30 Brian Pern (b03v0svc)
The Life of Rock with Brian Pern

Birth of Rock

Prog-rock legend and inventor of world music Brian Pern takes us on an imagined journey through the last half-century of rock music. In part one, Pern investigates rock's prehistoric origins, asks who was the smartest band and reminisces about dressing up as a crab.

THU 23:00 Alexander Armstrong's Real Ripping Yarns (b03zqgk1)

Our dashing hero Alexander Armstrong explores the literature that inspired Michael Palin and Terry Jones's classic TV comedy Ripping Yarns, a loving parody of the Boys' Own books and magazines of their childhood. Featuring clips from Ripping Yarns, archive and interviews with experts, modern-day adventurers and Palin and Jones's own memories. In this affectionate and entertaining film Armstrong celebrates a long-lost slice of Britishness.

THU 00:00 Nigel Slater's Icing on the Cake (b04p114k)

Nigel Slater takes us on a nostalgic, funny and heartwarming journey back in time exploring the earliest origins of cake in Britain, charting the ways in which Neolithic man used to munch on flat compacted handfuls of grain, through to the ways in which Elizabethan cooks discovered the magical raising agent that is the egg white and the impact of developments in kitchen technology on our cake consumption.

Cake has come a long way from its earliest manifestations and Nigel brings this tastiest of culinary histories to life. He finds out about the ancient rituals surrounding the baking and eating of cake and the ways in which buns were once considered too risqué for us common folk and so were banned.

He goes back to school to learn about the science behind a successful bake, explores whether our desire to eat cake really is just a question of mind over matter, examines the rise and popularity of the cupcake and comes face to face with some grisly cakes created by bakers hoping to revolutionise what we mean when we refer to a cake.

Reflecting on the cakes of his youth and childhood, Nigel

examines the mass appeal of a culinary creation that can be defined by that most appropriate of phrases 'naughty but nice'. Whether it be homemade cakes courtesy of Auntie Marjorie or a battenberg bought from the corner shop, for Nigel a cake is all about sharing and so here he shares the story of British cake.

THU 01:00 Top of the Pops (b06pm83p)
[Repeat of broadcast at 19:30 today]

THU 01:35 Detectorists (b06pm901)
[Repeat of broadcast at 22:00 today]

THU 02:05 Brian Pern (b03v0svc)
[Repeat of broadcast at 22:30 today]

THU 02:35 Alexander Armstrong's Real Ripping Yarns (b03zqgk1)
[Repeat of broadcast at 23:00 today]

FRIDAY 20 NOVEMBER 2015

FRI 19:00 World News Today (b06ppjnh)
The latest national and international news, exploring the day's events from a global perspective.

FRI 19:30 Pappano's Classical Voices (b062hmz6)
Mezzo-Soprano

Series in which conductor Sir Antonio Pappano (music director of the Royal Opera House since 2002) explores the great roles and the greatest singers of the last hundred years through the prism of the main classical voice types - soprano, tenor, mezzo-soprano, baritone and bass. Through discussion, demonstrations and workshops, Pappano explores every aspect of the art of great singing.

The lowest female voice type, and the one closest to a woman's natural speaking voice, the mezzo-soprano only rarely plays the name part. But when she does - in Carmen, Samson et Dalila, and La Cenerentola - the fireworks begin. More often, she is the rival, and the villainess.

Antonio explores the particular effect the mezzo voice has on the audience. Her low, sultry tones make her voice perfect for the earth goddess, but also the enchantress, the siren. But she has to sing nearly as high as the soprano. So how does she do it? What is the 'chest voice' and what effect does it have? How do you sing ugly to convey the evil of a character without destroying your voice, and at the same time unearth some redeeming qualities?

Antonio finds out what makes the mezzo tick by looking at great performances from Giulietta Simionato, Kathleen Ferrier, Marian Anderson, Shirley Verrett, Cecilia Bartoli and Lorraine Hunt Lieberson, and taking soundings from Janet Baker, Christa Ludwig, Joyce DiDonato, Felicity Palmer and Sarah Connolly.

FRI 20:30 Pappano's Classical Voices (b0638jby)
Baritone and Bass

Series in which conductor Sir Antonio Pappano explores the great roles and the greatest singers of the last hundred years through the prism of the main classical voice types - soprano, tenor, mezzo-soprano, baritone and bass. Through discussion, demonstrations and workshops, Pappano explores every aspect of the art of great singing.

Gods, demons, drunks, lechers, silly old codgers, double-dyed villains - life on stage for the bass is rarely dull. The baritone, meanwhile, is the most common male voice type, and yet the parts he sings - especially in the operas of Verdi - are anything but.

Pappano explores the lowest male voice types, and the roles they play, in comedy as well as tragedy. How do basses sing so low? What different qualities does a baritone bring to a Schubert song? He meets the Russian 'oktavists', who sing a whole octave lower than the standard bass. With the help of leading practitioners - Bryn Terfel, John Tomlinson, Ferruccio Furlanetto, Christian Gerhaher, Alessandro Corbelli and Willard White - Pappano uncovers the tricks of the trade. He examines in detail some key performances from the legendary basses and baritones of the past - Feodor Chaliapin, Tito Gobbi, Paul Robeson, Dietrich Fischer-Dieskau, Boris Christoff, Nicolai Ghiaurov and Ezio Pinza.

FRI 21:30 Mercury Prize (p03487k0)
2015

Mercury Prize Live 2015

The Mercury Prize in association with BBC Music is presented live from the Radio Theatre at Broadcasting House by Lauren Laverne to celebrate the 12 albums that have been selected and announce this year's winner.

This programme showcases a number of performances from the shortlisted artists live from the Radio Theatre and shows highlights of sessions with more of the shortlisted artists filmed for 6 Music and Radio 1 at Maida Vale and the Live Lounge earlier in the day.

This year's shortlisted artists are: Aphex Twin, Benjamin Clementine, C Duncan, ESKA, Florence + The Machine, Gaz Coombes, Ghostpoet, Jamie xx, Roisin Murphy, Slaves, SOAK and Wolf Alice.

As ever the Mercury Prize shortlist has thrown up an eclectic mix of music from emerging acts alongside more established artists. Expect music from all artists and views from a passionate judging panel whose enthusiasms will unquestionably have directed attention to a number of albums that might otherwise have stayed underground.

FRI 22:35 Mercury Prize (b06q693n)
2015

Mercury Prize Winners at the BBC

Selected archive performances from a variety of Mercury Prize winners on a mixture of BBC shows down the years.

Previous winners have included Primal Scream, M-People, Portishead, Roni Size, Dizzee Rascal, Elbow, Arctic Monkeys and James Blake, to name but a few.

The Mercury Music Prize launched in 1992 and 2015 will see its 24th winner.

FRI 23:35 Totally British: 70s Rock 'n' Roll (b01r3pm9)
1970-1974

Trawled from the depths of the BBC Archive and classic BBC shows of the day - Old Grey Whistle Test, Top of the Pops and Full House - a collection of performance gems from a totally rock 'n' roll early 1970s.

This was a golden era for British rock 'n' roll as everyone moved on from the whimsical 60s and looked around for something with a bit more oomph! In a pre-heavy metal world bands were experimenting with influences that dated back to 50s rock 'n' roll, whilst taking their groove from old-school rhythm and blues. It was also a time when men grew their hair long!

In a celebration of this era, we kick off with an early 1970s Badfinger number direct from the BBC library and continue the groove from the BBC vaults with classic rock 'n' roll heroes like Free, Status Quo, the Faces, Humble Pie and Mott the Hoople. Plus from deep within the BBC archives we dig out some rarities from the likes of Babe Ruth, Stone the Crows, The Sensational Alex Harvey Band, Man, Heavy Metal Kids and original rockers Thin Lizzy... to name but a few.

Sit back and enjoy a 60-minute non-stop ride of unadulterated Totally British 70s Rock 'n' Roll!

FRI 00:35 Totally British: 70s Rock 'n' Roll (b01r7hk5)
1975-79

A romp through the BBC archive library from 1975 to 1979 has unearthed some seldom-seen performances of the rarely explored genre of pub rock and other late 70s rock 'n' roll gems from classic music programmes like the Old Grey Whistle Test and Top of the Pops. Before the DIY culture of punk took hold there was a whole breed of real musicians who honed their craft in the backrooms of pubs. And towards the end of the 70s men's hair was starting to get shorter too.

This compilation has uncovered rarely seen footage from the likes of Canvey Island's Dr Feelgood, original pub rockers Ducks DeLuxe, Eddie and the Hot Rods, Elvis Costello, Meal Ticket, Steve Gibbons Band, Dave Edmunds and chum Nick Lowe, a pre-Mike & the Mechanics' Paul Carrack in his first band Ace, a post-Faces Ronnie Lane, The Motors, the first TV performance from Dire Straits, Graham Parker and the Rumour and many more.

FRI 01:35 Storyville (b06pyw3w)
[Repeat of broadcast at 22:00 on Monday]

FRI 03:00 Kings of Rock and Roll (b007c95q)
A journey back to the 1950s for a look at the wildest pop music

of all time in a film that tells the stories of Bill Haley, Elvis Presley, Little Richard, Chuck Berry, Jerry Lee Lewis and Buddy Holly, giants from an era when pop music really was mad, bad and dangerous to know.

The programme features the artists themselves, alongside people like Bill Haley's original Comets, The Crickets, Buddy Holly's widow Maria Elena, Jerry Lee Lewis's former wife Myra Gail and his sister, Chuck Berry's son and many more, including June Juanico, Elvis's first serious girlfriend.

Other contributors include Tom Jones, Jamie Callum, Paul McCartney, Cliff Richard, Joe Brown, Marty Wilde, Green Day, Minnie Driver, Jack White of The White Stripes, The Mavericks, Jools Holland, Hank Marvin, Fontella Bass, John Waters and more.

Elvis's pelvis was just the start. Who had to change the lyrics to their biggest hit because the originals were too obscene? Who married their 13-year-old cousin? Who used lard to get their hair just right? And what happened on the day the music died?