

SATURDAY 02 DECEMBER 2017

SAT 19:00 Ancient Egypt - Life and Death in the Valley of the Kings (p01538p0)
Original Series

Life

Egypt captivates us like few other ancient civilizations - but what was it like to actually live there as an ordinary person 3,500 years ago? Egyptologist Dr Joann Fletcher goes on a fascinating journey in search of people like us, not the great pharaohs, but the ordinary people who built and populated this incredible ancient civilization, creating a remarkable way of life and an extraordinary way of death.

These questions are explored through the histories of Kha and Meryt, an architect and his wife who lived just outside the Valley of the Kings. They left behind a treasure trove of information in their extraordinary tomb, full of objects from their lives and death - everything from make-up to death masks, loaves of bread to life-like figurines, even the tools Kha used at work in the royal tombs. Joann uses this trove to travel into the remarkable world of these ancient Egyptians, both in life and the afterlife.

In the first part of the series, Joann explores how people lived during this time, from the tightly-packed houses and villages of the common people, to the clothes they wore and the food they ate. She discovers the ordinary Egyptians' love of poetry and their enthusiasm for interior design, as well as what it was like working in the most famous cemetery on Earth.

SAT 20:00 The Mekong River with Sue Perkins (b04tp74d)
Episode 4

In this fourth and final episode, Sue reaches her final destination - China, home to the source of the Mekong. Here, change is sweeping through faster than any other Mekong nation, as China's economic miracle transforms even the remotest regions.

Arriving in Yunnan's tropical south western region of Xishuangbanna, Sue discovers how this once remote and sleepy region is now home to a booming tourist industry, with the indigenous Dai tribe at its heart. To the Dai, water is holy, the physical and spiritual source of life. Thousands of Han Chinese - who make up 92 per cent of China's population - flock to the Dai Minority Park, a Disneyfied version of an ancient Dai village, where they take part in a traditional water splashing ceremony. After decades of communism, the park represents China's renewed interest in the colourful melting pot of peoples that actually make up modern China, providing a must-see holiday destination for its burgeoning middle class.

Leaving the Dai Park, Sue climbs higher into the foothills of Xishuangbanna to discover how the Aini tribe are adapting to a changing China. The Aini have farmed pu'er tea for 2,000 years - suddenly they can become rich from its harvest, as China's newly wealthy professionals buy up this now fashionable delicacy.

But as China tries to work out what is significant from its past and what it should take into its future, some people feel this rush to modernity is threatening what little remains of ancient traditions and beliefs. Sue meets Li Jin Mei, who is desperately trying to preserve what is left of her Aini culture.

Travelling further along the river's valleys and foothills, Sue reaches the town of Baisha under the shadow of the Himalayas. Home to the Naxi people, this region is famous for its botanists and herbalists, made popular by Victorian plant hunters such as Joseph Rock. Sue attends a consultation with the renowned Naxi Chinese herbalist Dr Ho and explores his magnificent herbal garden.

Climbing higher and ever closer to the source, Sue encounters her first taste of Tibetan life in the village of Cizhong. French missionaries came here in 1850, bringing the Catholic gospel and converting, over time, 80 per cent of this village to Catholicism. Sue meets Mr Xiao Jie Yi, whose humbling story relates how his Catholic faith carried him through 30 years of hard labour during Mao's Cultural Revolution.

In modern China, Cizhong is facing a new, even more dramatic change - a hydroelectric dam is being built close by, bringing with it construction along the river's banks, landslides and the prospect of flooding. Six mega dams are already in service on the Mekong in Yunnan, generating the equivalent of enough electricity to light up London for three years. But the human and ecological cost here and downstream is yet to be calculated - already more than 100,000 ethnic people were displaced to make way for the dams.

Finally, after nearly 3,000 miles, Sue embarks on the last leg of her epic journey, arriving high up on the Tibetan Plateau in Qinghai province, close to the source of the Mekong. In a life-changing experience, she is immersed in the lives of a family of

Tibetan yak herders, and joins a group of nuns as they make an offering to the water gods for their protection. Here, at the point where the Mekong's waters first filter into the lives of people, Sue reveals the eternal bond between humans, gods and this mighty river.

SAT 21:00 Witnesses (b09hgdzx)
A Frozen Death

Episode 3

When the body of a young woman is found buried under a wind turbine, police work to figure out if and how this death might be related to the other murders. Detective Sandra Winckler starts using the same dating app that Catherine Keemer had used in the run-up to her abduction, in an effort to track down the man who snatched Catherine. But is this, and the budding friendship between the two women, a step too far in becoming personally involved in the investigation?

In French with English subtitles.

SAT 21:50 Witnesses (b09hgf01)
A Frozen Death

Episode 4

Believing him to be the kidnapper, Catherine holds Martin Souriau captive. She is frantic to find her missing child and will go to any length to make Souriau talk. Meanwhile, Maxine wants to take Sandra off the case and put her under police protection, along with all of her exes. Sandra realises she is falling for Antoine, but could Antoine be the man who broke into her apartment?

In French with English subtitles.

SAT 22:45 The Vietnam War (b097ts0b)
Series 1

This is What We Do (July 1967-December 1967)

American casualties and enemy body counts mount as marines face deadly North Vietnamese ambushes and artillery south of the DMZ and army units chase an elusive enemy in the Central Highlands. Hanoi lays plans for a massive surprise offensive, and the Johnson administration reassures the American public that victory is in sight.

SAT 23:40 What a Performance! Pioneers of Popular Entertainment (b06rhpc7)
The Rise of Variety

In the second episode, Frank Skinner and Suzy Klein explore the golden age of variety theatre, from the start of the 20th century to the outbreak of the Second World War. They immerse themselves in the careers of megastars including George Formby and Gracie Fields, who both remain household names today. They also get to grips with some lesser-known artists, including La Loïe Fuller, an innovative Chicago-born choreographer and dancer who took London by storm during the Edwardian era.

Two other stars of the pre-World War I era - the Scottish comedian and singer Sir Harry Lauder and the once hugely famous Vesta Tilley, a talented male impersonator - feature prominently as well, and Frank and Suzy attempt to recreate their acts, live on stage, at the end of the show.

SAT 00:40 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 02:10 The Mekong River with Sue Perkins (b04tp74d)
[Repeat of broadcast at 20:00 today]

SUNDAY 03 DECEMBER 2017

SUN 19:00 Great Continental Railway Journeys (b08h80s0)
Series 4 - Reversions

The Black Forest to Hannover - Part 1

With his 1913 Bradshaw's in hand, Michael Portillo ventures deep into the Black Forest on a quest to discover the essence of Germany and discovers how Hansel and Gretel helped to unify the nation. A humbling master class in carving cuckoo clocks shows him how the nation's reputation for quality and reliability in manufacturing was established from the early 18th century.

A romantic stop at the ruined Schloss in Heidelberg follows before Michael gets an insider's guide to share dealing on the Frankfurt Stock Exchange.

At Goettingen University, Michael discovers two sides of student life at the turn of the 20th century - the duelling fraternities and the groundbreaking scientists, who laid the foundation for Germany's world-class transport technology today. Braving the force of the Goettingen wind tunnel, Michael investigates the track where model trains are fired at up to 360km per hour.

SUN 19:30 University Challenge (b09hd9tq)
2017/18

Episode 19

The second round continues as two student teams make a bid to reach the quarter-final stage of the competition. Jeremy Paxman asks the questions.

SUN 20:00 Classic Quartets at the BBC (b08jq8ll)

Clemency Burton-Hill celebrates the rich and ravishing world of the string quartet in a journey through 50 years of BBC archive. Some of the world's greatest ensembles including the Amadeus, Chilingirian, Borodin and Kronos quartets perform in myriad styles and settings, from stately homes to helicopters. Music ranges from Mozart, Beethoven and Schubert to Steve Reich, Elvis Costello and Pete Townshend, in a tradition which stretches back to Haydn in the 18th century.

SUN 21:00 Natural World (b00gfq9w)
2008-2009

Great White Shark - A Living Legend

Wildlife film. South African naturalist Mike Rutzen is crazy about great white sharks. He never saw Jaws, so he doesn't share the terror that makes these sharks the world's most feared predator.

For ten years, Mike has swum with great whites without the protection of a cage. He has spent so much time in their company that he has learnt to read their body language and to think like a shark. It is this knowledge that keeps him safe.

Mike's quest to understand them better now takes him into the heart of a seal ambush site, where he hopes to witness their hunting behaviour underwater.

SUN 21:50 Natural World (b00fpyg)
2008-2009

Whale Sharks

Beginning at the fabulous coral reef of Ningaloo in Western Australia, intrepid marine biologist Mark Meekan attempts to unravel the mysterious wanderings of the biggest fish in the sea, the whale shark.

Whale sharks grow to over 12 metres long but are gentle, filter-feeding giants; even Mark's five-year-old son can swim alongside them. Yet no-one knows where they go once they leave Ningaloo's turquoise lagoons.

Using satellite tags and photo IDs, Mark tracks them to the white coral beaches of the Seychelles and the tropical jewel of Christmas Island, where bright-red land crabs begin their annual migration. It's hard work, taking in 20 failed satellite tags and countless frustrating dives, before Mark makes a breakthrough which doesn't just add to our understanding of these huge 'dinosaur fish' but offers crucial information about how the whale sharks of Ningaloo can be protected better.

SUN 22:40 Wild (b007hb6n)
2006-07 Shorts

Mull: Eagle Paradise

The story of the white-tailed sea eagle is one of the great successes of British conservation. When wildlife cameraman Gordon Buchanan grew up on Mull there were no sea eagles at all, but now they are back and thriving. A third of all Britain's sea eagles now live on the island. Gordon returns to Mull to find out what makes this place such a paradise for the magnificent birds.

SUN 22:50 Wild (b007cs2w)

2006-07 Shorts

Shearwater Island

How thousands of strange nocturnal birds make their home on the tiny island of Bardsey in north Wales, and an exploration of the rich history of the island itself.

SUN 23:00 Taxi Tehran (b073bp67)

Banned from making movies in Iran, director Jafar Panahi poses as a taxi driver, driving around Tehran recording the lives of its inhabitants and the difficulties they face. He is joined by a host of spirited characters, including his inquisitive young niece Hana, who is studying film-making at school.

In Persian with English subtitles.

SUN 00:20 Classic Quartets at the BBC (b08jq8ll)

[Repeat of broadcast at 20:00 today]

SUN 01:20 Natural World (b00gfq9w)

[Repeat of broadcast at 21:00 today]

SUN 02:10 Natural World (b00fpygj)

[Repeat of broadcast at 21:50 today]

MONDAY 04 DECEMBER 2017

MON 19:00 Beyond 100 Days (b09hdkyf)

Series 1

04/12/2017

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

MON 19:30 University Challenge (b06tsllh)

Christmas 2015

Aberdeen v Sheffield

Jeremy Paxman asks the questions in the Christmas-themed quiz for distinguished university alumni.

It is the penultimate first-round match and both teams are doing battle for a place in the semis. They are the University of Aberdeen, with broadcaster Nicky Campbell and Kezia Dugdale, leader of the Scottish Labour Party, and Sheffield University, with science presenter Adam Hart and Nicci Gerrard, the thriller writer better known as Nicci French.

MON 20:00 Mexico: Earth's Festival of Life (b08qdxk7)

Series 1

Mountain Worlds

Mexico is a vast country, over 2,000 miles long, dominated by a great chain of mountains, the Sierra Madre. Journey down this rocky spine and discover an amazing diversity of life, from black bears and orchid bees to resplendent quetzals and millions of monarch butterflies. This is a land where giant volcanoes simmer and ancient and modern cultures collide in a festival of life.

MON 21:00 The Art That Made Mexico: Paradise, Power and Prayers (b09hm1y8)

Series 1

Paradise

Alinka Echeverria reveals the way in which Mexican artists shook off European artistic influence to find a distinctive voice, expressed through landscape painting, and reconnected with pre-Hispanic subject matter. The murals of Teotihuacan and illustrated Aztec codices show how nature was the reference point for their worldview, their power structures and their calendars. But following the conquest in the 16th century, the Spanish 're-educated' indigenous artists to aspire to European aesthetics, and for nearly 300 years after conquest, the art of what was called New Spain looked a lot like the art of old Spain.

A century after independence in 1810, artists began to depict Mexico's ancient foundation myths, including the symbolic volcanoes that dominate the Valley of Mexico. Indigenous people, their land and lives were no longer taboo. Following the Mexican Revolution that began in 1910, landscape paintings established a new style that was resolutely Mexican and confirmed the re-established connections between Mexico's

indigenous population and their land. Forces of nature and Mexico's landscape continue to be integral to the Mexican sense of artistic identity.

MON 22:00 Handmade in Mexico (b09hqmf)

Series 1

Huipil

A huipil is a loose-fitting tunic, generally made from two or three rectangular pieces of fabric which are then joined together with stitching, ribbons or fabric strips, with an opening for the head and, if the sides are sewn, openings for the arms. Tehuana dresses are crafted by Zapotec women who live in a matriarchal culture. They elaborately embroider very elegant dresses made of velvet or silk, which they wear at religious ceremonies and fiestas. These dresses were famously worn by Frida Kahlo. The huipiles originate from crafts developed to meet very utilitarian needs, but became more decorative as time went on and now they are regarded as objects of status.

MON 22:30 Britain's Lost Masterpieces (b07xjsqj)

Series 1

Swansea

The Swansea museum store contains everything from a stuffed pigeon to a police car, but can Bendor and Jacky reveal a multimillion-pound lost masterpiece that will not only become a jewel of Swansea museum's collection, but also rewrite art history? Also, a rare appearance at the museum of a giant painting of local coal miners prompts Jacky to re-examine the life of the man who painted them, the renowned Polish artist Josef Herman. She tracks down those who remember him in south Wales.

MON 23:30 Storyville (b052790w)

Mugabe and the Democrats

Political documentary thriller set in Zimbabwe, following two political enemies forced on a joint mission.

Two top politicians, MP Paul Mangwana and MP Douglas Mwonozora, from the governing party and the opposition respectively, have been appointed to lead Zimbabwe through the process of writing a new constitution. It is the ultimate test that will either take the country a decisive step closer to democracy and away from President Robert Mugabe's dictatorship, or towards renewed repression.

The film follows the two adversaries as they undertake their gargantuan task, travelling together throughout the country to ask Zimbabweans about their opinions on matters including the judicial system and the president's authority. Overcoming their initial suspicion, a kind of understanding grows between the two men, as they endure intrigue during the negotiations that follow. In a country impeded by economic sanctions from the international community and hyperinflation, failure is not an option.

MON 01:00 Pappano's Classical Voices (b06154q3)

Soprano

Series in which conductor Sir Antonio Pappano explores the great roles and the greatest singers of the last 100 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.

Behind every great voice is not just a rock-solid technique, but also a unique personality. As well as specially shot interviews and workshops with stars such as Jose Carreras, Anna Netrebko, Jonas Kaufmann, Joyce DiDonato, Bryn Terfel, Juan Diego Florez, Christa Ludwig, Thomas Allen, Felicity Palmer, John Tomlinson and Sarah Connolly, Pappano examines key performances from some of history's great operatic icons - Enrico Caruso, Maria Callas, Joan Sutherland - as well as those of singers from the more recent past, such as Luciano Pavarotti, Jon Vickers, Peter Pears and Janet Baker.

Antonio explores such topics as what is going on in a singer's body to produce a great voice; how one 'projects' a Brinnhilde over large orchestral forces; whether great singers also need to be great actors; what is vibrato, legato, staccato; what are chest and head voices - how do they work and when does one use them? He examines passaggio, coloratura and support, and shows why a tenor's high C hits can pin you to the back of your seat.

He begins with the soprano - at the heart of nearly every opera, although she isn't always alive come the final curtain. Tragic heroines, warriors, feisty servants, divas - the soprano sings some of the most fabulous roles in opera. But while the prima donna may suffer on stage, she doesn't suffer fools off it. The

great sopranos have always been larger-than-life characters, adored by their public and, in the case of Maria Callas, famous far beyond the opera house, her private life of as much fascination to the press as her singing.

But how does the soprano carry off these vocally and dramatically demanding roles? How does the body work to produce the sound, and what techniques are at play? How do you make yourself heard up in the gods if you're competing with a huge orchestra? What is going on in a soprano's throat, indeed her whole body? How does she sing coloratura? What effect does vibrato have on us, the listeners?

To find out, Pappano looks in detail at performances from some of the legendary sopranos of the modern era - Maria Callas, Joan Sutherland, Birgit Nilsson, Leontyne Price, and Renata Tebaldi. And sharing their secrets are some of the leading sopranos of today - Anna Netrebko, Barbara Hannigan, Carolyn Sampson, Diana Damrau, and Eva-Maria Westbroek.

MON 02:00 How to Be a Surrealist with Philippa Perry (b08l6qd8)

Melting clocks, lobster telephones - the perplexing images of surrealist art are instantly recognisable to millions. But for psychotherapist Philippa Perry the radical ideas which inspired the original artists are often overlooked. In this film, Philippa takes us on a playful journey into the unconscious to discover the deep roots of surrealism in the political upheavals of 1920s Europe and new ways of understanding the human psyche.

Among her surrealist adventures, Philippa sets up her own Bureau of Surrealist Research on the streets of Paris and invites members of the public to tell her their dreams, she uncovers the role of women in the surrealism movement and has a go at being an artist's muse herself, rolls up her sleeves to try some surrealist techniques with art critic Adrian Searle, and puts on a screening of Dali and Bunuel's famous film *Un Chien Andalou* for a group of unsuspecting art students.

MON 03:00 The Art That Made Mexico: Paradise, Power and Prayers (b09hm1y8)

[Repeat of broadcast at 21:00 today]

TUESDAY 05 DECEMBER 2017

TUE 19:00 Beyond 100 Days (b09hdkyr)

Series 1

05/12/2017

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

TUE 19:30 University Challenge (b06tslq7)

Christmas 2015

Durham v LSE

Jeremy Paxman asks the questions in the Christmas-themed quiz for distinguished university alumni.

It's the last first-round match, as two teams are up against each other for a place in the semis. The University of Durham team includes news presenter Tim Wilcox and founder of the Eden Project Sir Tim Smith. Playing them is the LSE team, with financial whiz-kid Martin Lewis and Radio 4's Today presenter Justin Webb.

TUE 20:00 Armada: 12 Days to Save England (p02pkxkm)

Series 1

Episode 1

In the first part of a major three-part drama documentary series, Anita Dobson stars as Elizabeth I, and Dan Snow takes to the sea to tell the story of how England came within a whisker of disaster in summer 1588. Newly discovered documents take us right inside the Spanish Armada for the very first time and reveal a missed opportunity that could have spelled the end of Tudor England.

TUE 21:00 Invasion! with Sam Willis (b09hr5pc)

Series 1

Episode 1

Three-part series in which intrepid historian Dr Sam Willis reveals a remarkable story of invasion in Britain spanning thousands of years.

From the time continuous settlement began in Britain over 10,000 years ago to Iron Age hillforts and Viking ships, Sam

explores the many invasions of Britain. He unearths hidden stories to build a vivid picture of both successful and unsuccessful invasions and examines how they have shaped our psyche, including fear of invasion.

Some invasions are bloody, some bloodless. Some were by invitation, some absurd and doomed. From Barbary pirates and brutal border raids to the air attacks of the 20th century, these invasions have shaped modern Britain and made us the people we are today.

In this first programme, Sam fells a tree with a flint axe in Kent, gets to grips with the technology of Viking boats and rides an Iron Age chariot. He also searches for clues of invasion at Silbury Hill and tracks down evidence of the Beaker people who brought ceramics, metalwork and beakers to Britain.

TUE 22:00 A Timewatch Guide (b08ybzhe)
Series 4

Vikings: Foe or Friend?

On 8 June 793 Europe changed forever. The famous monastery at Lindisfarne on the Northumbrian coast was suddenly attacked and looted by seafaring Scandinavians. The Viking Age had begun.

Professor Alice Roberts examines how dramatically the story of the Vikings has changed on TV since the 1960s. She investigates how our focus has shifted from viewing them as brutal, pagan barbarians to pioneering traders, able to integrate into multiple cultures. We also discover that without their naval technology we would never have heard of the Vikings, how their huge trading empire spread, and their surprising legacy in the modern world.

TUE 23:00 Turner Prize (b09j35lw)
2017

The Ceremony

A special live programme as the prestigious Turner Prize for contemporary art is awarded in a ceremony hosted by Britain's City of Culture, Hull. Jane Hill and Rebecca Jones present from Hull Minster and the Ferens Art Gallery.

TUE 23:30 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.

TUE 00:30 Pappano's Classical Voices (b061f4gb)
Tenor

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 tenor is opera's glamour boy, the king of the high Cs, the leading man. Whether the tragic hero or the young romantic lead, whether dramatic or lyric, the tenor usually gets the girl, even if they rarely live happily ever after. Antonio examines the techniques behind the bravura performances, featuring great tenors such as Enrico Caruso, Luciano Pavarotti, Franco Corelli, Fritz Wunderlich, Jon Vickers, Peter Pears and Mario Lanza.

With contributions from leading tenors of today - Jonas Kaufmann, Juan Diego Florez and Jose Carreras - and a voice lesson from Thomas Allen, Antonio seeks out the tricks of the trade. How does a tenor 'colour' his voice? Why do his high notes provoke an animal response in audiences? How does he sing from bottom to top of his two-octave range without seeming to change gear? Why did the tenor only come centre

stage in the 1830s? Why is Enrico Caruso still regarded as the greatest and most influential tenor ever? And what does it do to your nerves to sing a high C?

TUE 01:30 Armada: 12 Days to Save England (p02pkxkm)
[Repeat of broadcast at 20:00 today]

TUE 02:30 Invasion! with Sam Willis (b09hr5pc)
[Repeat of broadcast at 21:00 today]

WEDNESDAY 06 DECEMBER 2017

WED 19:00 Beyond 100 Days (b09hdkz2)
Series 1

06/12/2017

Katty Kay in Washington and Christian Fraser in London return to report on the events that are shaping the world.

WED 19:30 University Challenge (b06ts1y6)
Christmas 2015

Semi-Final 1

It is the first of the semi-finals in the University Challenge Christmas quiz for grown-ups.

Jeremy Paxman asks the questions.

WED 20:00 How the Wild West Was Won with Ray Mears (b045nz9q)
Deserts

Ray Mears looks at how the landscapes of America's five great deserts challenged the westward push of the early pioneers.

As Ray travels through the cold high mountain Great Basin desert and the hot Sonoran desert of southern Arizona, he discovers how their hostile geography and rich geology shaped the stories of fortune hunting and lawlessness in the Wild West, and were the setting for the last wars between the US Army and the Apache warrior tribes.

Ray's journey begins in Monument Valley, whose dramatic desert landscape has become synonymous with the Wild West years. He explores how plants and animals survive in this waterless climate and how the Navajo Indian people adapted to the conditions. In Tucson, he meets up with desert coroners Bruce Anderson and Robin Reineke, who show him how the desert still kills people today.

He explores how the Apache adapted their warfare methods to the desert and how the US cavalry struggled in the hot arid landscape. In Tombstone, he gets to grips with the myths around lawmakers and lawlessness and how it flourished in the remote desert regions of the Old West. He discovers how this forbidding landscape was the perfect refuge for bandits and pursues the outlaw trail to Butch Cassidy's hideout at Robber's Roost. His journey ends with the story of Geronimo's surrender which marked the end of the Indian Wars, and of the Old West.

WED 21:00 Digging for Britain (b09hgd0x)
Series 6

North

Professor Alice Roberts explores some of this year's most exciting archaeological finds from the north of Britain. Each discovery comes straight from the site, filmed by the archaeologists themselves. Alice discovers the well-preserved writing tablets, swords and domestic items left by Romans at Vindolanda during a time of British rebellion. On the Scottish island of Iona, there are traces of a long-lost monastery and pilgrimage site that was originally built by the legendary Saint Columba, and has been compared to Jerusalem. In the east of Scotland, a weapons hoard belonging to a wealthy Bronze Age warrior is unearthed.

WED 22:00 Detectorists (b09hgd0x2)
Series 3

Episode 5

Andy and Lance become eco-warriors when they find their beloved oak tree is due to be felled. But a 24-hour helpline turns out to be more of a hindrance. Andy stumbles upon treasure when, for once, he wasn't even looking.

WED 22:30 The League of Gentlemen (p008wzl)

Series 1

Love Comes to Royston Vasey

Black comedy series about small-town life. It seems that Mike and Cheryl may have made a mistake in allowing Geoff to be their best man.

WED 23:00 The Undiscovered Peter Cook (b0830jyr)
Following the death of one of Britain's greatest satirists, Peter Cook, in 1995, his widow Lin locked the door of his house and refused all access to the media - until more than twenty years later, when she invited her friend Victor Lewis-Smith and a BBC crew inside to make a documentary about the man she knew and loved, with unprecedented access to Peter's private recordings, diaries, letters, photographs and much more.

WED 00:00 Spike Milligan: Assorted Q (b04v644f)
Episode 1

A compilation of sketches from Spike Milligan's pioneering sketch shows - surreal, influential, controversial and sublime.

WED 00:30 Spike Milligan: Assorted Q (b04tt1yl)
Episode 2

A further selection of sketches from the legendary Spike Milligan's irreverent sketch shows. Alternative comedy before alternative comedy.

WED 01:00 Pappano's Classical Voices (b062hzm6)
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.

WED 02:00 How the Wild West Was Won with Ray Mears (b045nz9q)
[Repeat of broadcast at 20:00 today]

WED 03:00 Digging for Britain (b09hgd0x)
[Repeat of broadcast at 21:00 today]

THURSDAY 07 DECEMBER 2017

THU 19:00 Beyond 100 Days (b09hdkz7)
Series 1

07/12/2017

Katty Kay in Washington and Christian Fraser in London return to report on the events that are shaping the world.

THU 19:30 University Challenge (b06ts1z1)
Christmas 2015

Semi-Final 2

Second semi-final in the University Challenge Christmas quiz for grown-ups.

Jeremy Paxman asks the questions.

THU 20:00 The Secrets of Quantum Physics (b04tr9x9)
Einstein's Nightmare

Professor Jim Al-Khalili traces the story of arguably the most important, accurate and yet perplexing scientific theory ever - quantum physics.

The story starts at the beginning of the 20th century with scientists trying to better understand how light bulbs work. This simple question led them deep into the hidden workings of matter, into the sub-atomic building blocks of the world around us. Here they discovered phenomena unlike any encountered before - a realm where things can be in many places at once, where chance and probability call the shots and where reality appears to only truly exist when we observe it.

Albert Einstein hated the idea that nature, at its most fundamental level, is governed by chance. Jim reveals how, in the 1930s, Einstein thought he had found a fatal flaw in quantum physics, because it implies that sub-atomic particles can communicate faster than light in defiance of the theory of relativity.

For 30 years, his ideas were ignored. Then, in the 1960s, a brilliant scientist from Northern Ireland called John Bell showed there was a way to test if Einstein was right and quantum mechanics was actually mistaken. In a laboratory in Oxford, Jim repeats this critical experiment. Does reality really exist or do we conjure it into existence by the act of observation?

The results are shocking!

THU 21:00 Inside Chernobyl's Mega Tomb (b08650s6)

Documentary which follows the construction of a trailblazing 36,000-tonne steel structure to entomb the ruins of the nuclear power plant destroyed in the 1986 Chernobyl disaster. It films close up with the team of international engineers as they race to build the new structure before Chernobyl's original concrete sarcophagus - the hastily built structure that covers the reactor - collapses.

Built to last just 30 years, the temporary sarcophagus is now crumbling, putting the world at risk of another release of radioactive dust. Radiation levels make it impossible for workers to build the new shelter directly over the old reactor, so engineers are erecting the new megastructure - taller than the tower of Big Ben and three times heavier than the Eiffel Tower - to one side and will then face the challenge of sliding the largest object ever moved on land into place over the old reactor.

THU 22:00 Inside Porton Down: Britain's Secret Weapons Research Facility (b07hx40t)

Dr Michael Mosley investigates Britain's most secretive and controversial military research base, Porton Down, on its 100th anniversary. He comes face to face with chemical and biological weapons old and new, reveals the truth about shocking animal and human testing, and discovers how the latest science and technology are helping to defend us against terrorist attacks and rogue nations.

THU 23:00 Storyville (b09hx3x0)

When Rock Arrived in North Korea: Liberation Day

To the surprise of a whole world, the ex-Yugoslavian now Slovenian cult band Laibach became the first rock group ever invited to perform in the dictatorially repressed state of North Korea. Under the firm guidance of an old fan turned director and cultural diplomat, Laibach must deal with strict ideology, cultural differences and many technological difficulties in order just to perform. Struggling to get their songs through rigorous censorship, they race against the clock so they can be unleashed on an audience never before exposed to alternative rock'n'roll.

THU 00:00 Empire of the Seas: How the Navy Forged the Modern World (b00qfyw)

Series 1

High Tide

In the third programme in this epic four-part series on how the Navy has shaped modern Britain, Dan Snow sheds light on the evolution of Nelson's navy in the late 18th century. It was the most powerful maritime fighting force in the world, with highly trained crews and ambitious officers. He explores the national enterprise which supported it, and explains how the empire it helped create put Britain on the path to war with France.

Through the stories of naval heroes like Captain Cook, naval administrators like Charles Middleton and of course Admiral Nelson, Snow explores the elite training, the growing naval meritocracy and the years of tough experience which created a ruthless and professional 'band of brothers'. He looks at the impact of innovations such as the copper bottoming of the

navy's ships and the introduction of a new tax - income tax - to pay for the fleet.

Pushing back the boundaries of the known world, the Navy's highly trained crews and ambitious officers laid claim to a burgeoning empire, but at a huge price. By 1800, Britain had been dragged into the greatest sequence of wars the nation had ever seen.

THU 01:00 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.

THU 02:00 Inside Chernobyl's Mega Tomb (b08650s6)

[Repeat of broadcast at 21:00 today]

THU 03:00 Gaga for Dada: The Original Art Rebels (b07w6j9h)

On the 100th anniversary of Dada, Jim Moir (aka Vic Reeves) goes on an irreverent trip into the world of the influential avant-garde art movement.

Absurd, provocative and subversive, Dada began as a response to the madness of World War I. But its radical way of looking at the world inspired generations of artists, writers and musicians, from Monty Python to punk, Bowie to Banksy.

Jim restages an early Dada performance in Zurich's Cabaret Voltaire, where the movement began. Among those joining him in his playful celebration of the Dadaists and their impact are Armando Iannucci, Terry Gilliam, designer Neville Brody and artists Michael Landy and Cornelia Parker.

FRIDAY 08 DECEMBER 2017**FRI 19:00 World News Today (b09hdzkd)**

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

FRI 19:30 University Challenge (b06ts202)

Christmas 2015

The Grand Final

It is the grand final of this seasonal competition for alumni from some of the UK's top universities - which university will be Christmas University Challenge champions?

Jeremy Paxman asks the questions.

FRI 20:00 Top of the Pops (b06vkg5r)

1981 - Big Hits

A bumper crop of hits from the Top of the Pops archive showcasing an exciting year on the pop charts. 1981 embraced disco and ska, new wave punk, the burgeoning New Romantic scene and the rise of synthpop, with some prog quirkiness and good old rock 'n' roll thrown in.

Performances from big-hitter soloists Phil Collins, Shakin' Stevens and Kim Wilde are featured alongside the exuberant chaos of groups like Tenpole Tudor, Adam and the Ants and The Teardrop Explodes. It's party time as Odyssey fill the dancefloor with the infectious Going Back to My Roots and Clare Grogan adopts some unorthodox shapes for Altered Images' Happy Birthday. And The Specials' 2 Tone social-commentary classic Ghost Town vies with Ultravox's Vienna

and The Human League's Don't You Want Me for song of the year.

FRI 21:00 Tales from the Tour Bus: Rock 'n' Roll on the Road (b05rc9c)

Rock legend and tour bus aficionado Rick Wakeman takes us on a time-travelling trip through the decades in this first-hand account of rockers on the road from the late 1950s to the 80s and beyond.

It's an often bumpy and sometimes sleepless ride down the A roads and motorways of the UK during the golden age of rock 'n' roll touring - a secret history of transport cafes, transit vans, B&Bs, sleepless roadies and of loved ones left at home or, on one occasion, by the roadside. And it's also a secret history of audiences both good and bad, and the gigs themselves - from the early variety package to the head clubs, the stadiums and the pubs.

This is life in the British fast lane as told by Rick and the bands themselves, a film about the very lifeblood of the rock 'n' roll wagon train. With members of Dr Feelgood, Suzi Quatro, The Shadows, The Pretty Things, Fairport Convention, Happy Mondays, Aswad, Girlschool, The Damned and many more.

FRI 22:00 Classic Albums (b09hqppz)

Don McLean: American Pie

The story of Don McLean's second album American Pie. Crowned by its titular overture and the song Vincent, McLean's equally moving tribute to Van Gogh, American Pie is a classic of the folk-rock genre, earning its place alongside Carole King's Tapestry, Joni Mitchell's Blue and Neil Young's After The Goldrush as one of the landmark singer-songwriter LPs of 1971, a year recently celebrated in a book by award-winning journalist David Hepworth as 'rock's golden year'. Don McLean features in extensive new interviews, discussing the intricacies of his songs, the sometimes fraught recording process, and the album's legacy.

Forty-five years after its release, there has never been another album quite like American Pie. While a product of its era pinpointing a precise moment of cultural change in the shattered hopes of baby boomers, its impact continues to reverberate down the years with a poignancy and relevance that hasn't diminished.

The questions it raises about our country's past, present and future are as much a part of our cultural dialogue in Trump's 2017 as they were in Nixon's 1971. "I had most of the album written without American Pie," explains McLean. "But I wasn't happy with that. I knew it wasn't finished. I had more to say. I had this this really big song I needed to get out."

Interviewees include producer Ed Freeman and musician Jake Bugg, whose musical path was initiated when hearing Vincent for the first time on the TV, and a poignant archive performance of George Michael performing The Grave.

FRI 23:00 Buddy Holly: Rave On (b08q8f1n)

He was lanky, he wore glasses and he sang as if permanently battling hiccups. Aesthetically, Buddy Holly might have been the most unlikely looking rock 'n' roll star of the 50s. But he was, after Elvis Presley, unquestionably the most influential.

It was an all-too-brief career that lasted barely 18 months from That'll Be The Day topping the Billboard charts to the plane crash in February 1959 in Iowa that took Holly's life. That day was immortalised in Don McLean's 1971 song American Pie, and has become known as 'the day the music died'.

This film tells the story of Buddy Holly's tragically short life and career through interviews with those who knew him and worked with him. This combined with contributions from music fans paints a picture of an artist who changed music. Rock 'n' roll started with Elvis, but pop music started with Buddy Holly and The Crickets.

In an age of solo stars, Holly also led the first recognisable 'pop' group, The Crickets, who in name alone inspired The Beatles. As a songwriter, he revolutionised rock 'n' roll by introducing dynamic new rhythms and unpredictable melodies beyond its traditional blues roots. In his songs, written and recorded in the late 50s, we can already hear the beat group sound of the 60s and beyond.

Buddy Holly's story remains one of the most dramatic tales in rock 'n' roll, one which nearly 60 years after his breakthrough hit That'll Be The Day, deserves to be told again for a new generation. His life was tragically short. His legacy is triumphantly infinite.

FRI 00:00 Rock 'n' Roll America (b0615nmw)

Sweet Little Sixteen

In Cold War mid-1950s America, as the new suburbia was spreading fast in a country driven by racial segregation, rock 'n' roll took the country by surprise. Out of the Deep South came a rhythm-driven fusion of blues, boogie woogie and vocal harmony played by young black pioneers like Fats Domino and Little Richard that seduced young white teens and, pre-civil rights, got black and white kids reeling and rocking together.

This fledgling sound was nurtured by small independent labels and travelled up from the Mississippi corridor spawning new artists. In Memphis, Elvis began his career as a local singer with a country twang who rocked up a blues song and sounded so black he confused his white listeners. And in St Louis, black blues guitarist Chuck Berry took a country song and turned it into his first rock 'n' roll hit, Maybellene.

Movies had a big role to play thanks to 'social problem' films exploring the teenager as misfit and delinquent - The Wild One showed teens a rebellious image and a look, and Blackboard Jungle gave them a soundtrack, with the film's theme tune Rock Around the Clock becoming the first rock 'n' roll Number 1 in 1955.

Featuring Jerry Lee Lewis, Don Everly, Little Richard, Tom Jones, Wanda Jackson, Pat Boone, The Spaniels, PF Sloan, Joe Boyd, Jerry Phillips, Marshall Chess, JM Van Eaton (Jerry Lee Lewis's drummer), Charles Connor (Little Richard's drummer) and Dick Richards (Bill Haley's drummer).

FRI 01:00 Top of the Pops (b06vkg5r)

[Repeat of broadcast at 20:00 today]

FRI 02:00 Classic Albums (b09hqpzz)

[Repeat of broadcast at 22:00 today]

FRI 03:00 Buddy Holly: Rave On (b08q8f1n)

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