

FLORIAN DAVID  
FITZ

ALBRECHT ABRAHAM  
SCHUCH

# MEASURING THE WORLD

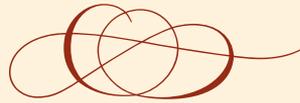
IN 3D

A FILM BY  
DETLEV BUCK  
BASED ON THE BESTSELLING NOVEL BY  
DANIEL KEHLMANN





## LOGLINE



Most human beings don't know why they are on earth, they accept their destiny and try to survive. The two enthusiastic scientists Carl Friedrich Gauss and Alexander von Humboldt go on an extraordinary adventure to fight against their predetermination.



MEASURING THE WORLD  
is a life-adventure film shot in 3D  
and based on the bestselling novel by  
DANIEL KEHLMANN

## SYNOPSIS



Alexander von Humboldt and Carl Friedrich Gauss set out in the early 19th century to discover the world. Their methods couldn't be more different: the naturalist Humboldt travels to distant countries to measure the world. Mathematician Gauss stays at home to calculate it.

Even the childhood of the world-famous scientists, Alexander von Humboldt and Carl Friedrich Gauss, separates the two of them: whilst Humboldt comes from a noble family and receives private tuition, Gauss grows up in precarious conditions. The mathematical genius of the young boy, however, does not go unrecognised, and the Duke of Brunswick helps him with a scholarship. The young Alexander, less brilliant by nature than Gauss, but bright and full of joy, also enjoys the Duke's favour. Both children shall discover the world, although their auspices are so different.

The naturalist Humboldt leaves the stuffy closeness of his homeland and travels to measure the world. His trusty companion is his scientific colleague Aimé Bonpland, whose French *laissez-faire* is somewhat envied by the Prussian, Humboldt. Together they explore foreign cultures, exotic animals, dreamlike and potentially fatal landscapes.



The mathematician Carl Friedrich Gauss travels immeasurable distances in his mind, comprehends the surface of the Earth by the means of mathematical abstraction. By his side is his wife Johanna, whose simple questions often provide the answer to mathematical riddles. Although Gauss has never been able to speak to anyone as an equal, she can at least understand him in part. Unfortunately Johanna dies much too early.

In 1828, the two scientists meet at the Naturalist Congress in Berlin. Both are legendary in their respective fields. Humboldt's collection of exotic animals is much admired and his lectures are enthusiastically attended. He plans and develops new projects and manages his fame.

Gauss has retreated from society, his masterpiece "Disquisitiones Arithmeticae" was too revolutionary for his contemporaries to understand. He is admired but not comprehended. His son Eugen accompanies him since Gauss hates travelling.

The meeting forces the two intellectual giants to break away, and confounding expectations, the journey becomes a fresh start.





## THE NOVEL



When *Measuring The World* by then thirty-year-old German novelist Daniel Kehlmann was published in autumn 2005, it was a rapid sensation. In what is an almost unheard-of combination, critics and readers were equally enthusiastic. The novel remained Germany's number one bestseller for weeks. It was a success abroad, too. It was translated into over forty languages, and the New York Times listed it as the second highest selling book worldwide in 2006.

In Germany alone, it has now sold over 2 million copies, is read at intermediary level and for school leaving exams, and countless new publications about the two protagonists bear witness to the enormous public interest that Daniel Kehlmann's fictional double biography created.



### BOOK REVIEWS

*"The subtle, intelligent and witty way this book entertains, something which German-language literature seldom manages, is one of this most remarkable book's many merits."* (FAZ)

*"A literary sensation."* (GUARDIAN)

*"A satire on German classicism; an adventure story; a depiction of bourgeois values in the early 19th century; a study of the sacrifices to, and morality of science; the portrait of two ageing men, each in his own way lonely; a wonderful readable text full of learned references, quotations and hidden gems."* (DIE ZEIT)

## THE HISTORICAL MODELS



The naturalist and geographer Alexander von Humboldt, (1769 – 1859) studied natural sciences and worked for the Prussian state as a mining specialist. He spent the years from 1799 to 1804 with botanist Aimé Bonpland on ecological expeditions in Central America and the north of South America. Until 1827 he lived primarily in Paris, where he detailed his expeditions in thirty-six exhaustive tomes. He gained renown as a pioneer in plant biology and geography, and researched into fields including demography, ethnology, economic geography, climatology, oceanography, physics, chemistry, geology mineralogy and volcanology.

Due to his reputation he was celebrated as a "second Columbus", a "scientific rediscoverer of America", a "new Aristotle". His interdisciplinary thinking and perpetual awareness of the big picture made him the world's first networker of natural sciences. In 1827 and 1828 his lectures in Berlin initiated a flourishing of natural sciences in Germany. In 1829 a further exploratory journey took him by way of the Baltic to Moscow and across the Urals to the Chinese border.

He dedicated the years from 1834 until his death to a monumental five volume work entitled "Cosmos", which he conceived of as a panoramic view of scientific world knowledge.

The mathematician and astronomer Carl Friedrich Gauss (1777 – 1855) showed extraordinary mathematical talent as a child.

At thirty he became director of the observatory in Göttingen and member of the city's Academy of Sciences. In 1801 he founded modern

number theory with his work "Disquisitiones Arithmeticae". In 1809 he followed this with "Theory of the Movements of the Celestial Bodies".

His works are of seminal importance for the fields of physics, particularly optics, both terrestrial magnetism, celestial mechanics, and, in mathematics, the theory of infinite sequences and numerical methods.



Gauss was a perfectionist and published nothing that he considered unfinished. This is why important parts of his mathematical work, including essential contributions to the theory of elliptic and modular functions, as well as his revolutionary works on non-Euclidian geometry, were first discovered many years after his death, when more than 20 volumes of his diary were found and reviewed.

In 1816 he was commissioned to measure the kingdom of Hanover. He worked on it for 25 years, and over the course of this task he developed his revolutionary theory of geodesy (the science of measuring), and differential geometry.

All college students know Gauss because of the bell curve named after him. The normal distribution principle described by Gauss takes the form of a bell on x-y axes. This curve allows random variables of the kind you find in biological measurements, molecular movements, or actuarial-related mathematics, to be calculated. Inaccuracies of measurement, deviations during factory production, or damage data in insurance matters can be described in terms of their probability in such a way that, despite there being a large amount of independent variables, normal distribution can be represented in the even curve of a bell-shape.





## A BREUGHEL PAINTING THAT COMES TO LIFE DETLEV BUCK ON HIS FILM



Daniel Kehlmann had transformed his novel into a brilliant script. The story defies normal structure, since it's about two simultaneous life stories reaching all the way from youth to old age. This is why we needed to be able to offer the viewers another point of view, so 3D suited us just fine.

### ***Did your decision prove correct?***

We only grasped the difference to conventional film pictures after a few days. You can't see it on set on the monitor, but you can when examining the dailies: every extra, each gesture or facial expression can be seen exactly. In the theatre you see the whole stage simultaneously, but usual 2D images focus in on one image plane. So I had to stage scenes even more precisely. I needed actors for even the tiniest roles and they had to be utterly concentrated. But this way we were able to enter a different era and wander around in it. The same goes for the faces in close-up: you can see every pore, every blemish, it's all so plastic and tangible. And that's exactly what we wanted when we decided to film the script in 3D.

### ***What did this decision mean at a production level?***

We found out that it cost a lot of money – in the final reckoning, about 15% extra. But the budget couldn't automatically be increased, so we had to cut shooting days; we reduced our scheduled forty-seven days to thirtyone. It became necessary to use these days of shooting very concentratedly. On set, the most diverse energies have to be brought together: techies, actors, props and light. So it's always a challenge, since I am trying to coordinate 120 people who are all doing their best and giving their utmost. That's why I always try and

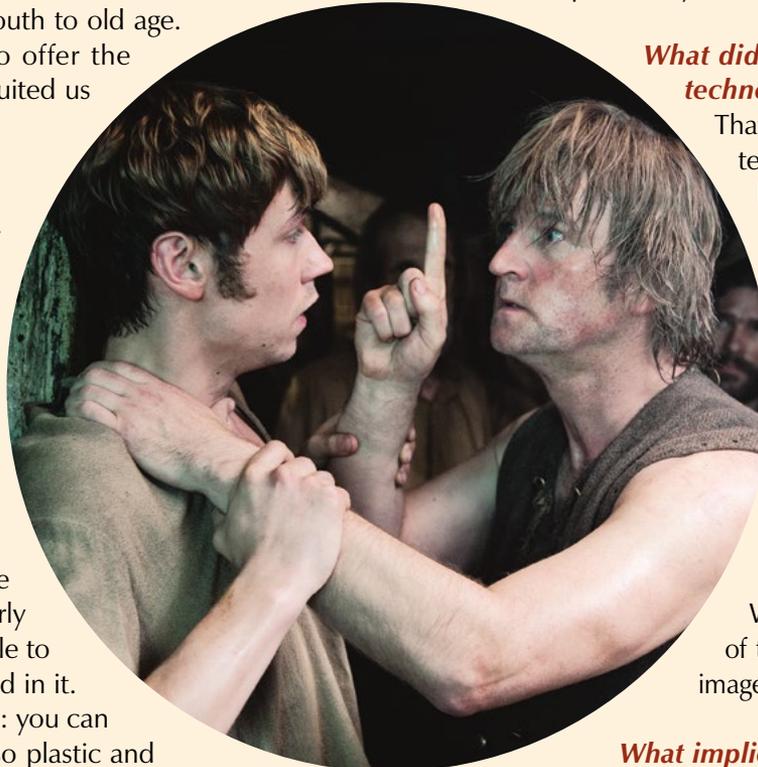
have a relaxed atmosphere on set, which is often pretty strenuous for me, personally.

### ***What did you find out about the new technology?***

That you don't need to have an exaggerated sense of respect towards it. I don't like to say "3D", as this sounds very technologically modern. I prefer to say "three-dimensional", since we're shooting a historical film that offers spatial images. But finally, a film remains a film. We are telling a story, and want the viewers to enter into it and accompany us. They go into a dark room, put on a pair of glasses, go on a trip. At some stage the viewers are no longer conscious that they are watching three-dimensional pictures. Which is why we regularly remind them of their spatial nature through our choice of images.

### ***What implications does this have on the story?***

Let's take Gauss, for example. Almost all his scenes play out indoors. Because his life primarily took place inside his head. The places he frequented were within a very small geographic radius. We express this in spatial camera shots. It's like a Breughel painting coming to life. The reason for each shot is that it increases the story's attraction, no matter whether we're talking about a snowstorm, a huge cave, chicken-plucking, teeth-pulling, love-making, dying, child raising, a brothel-visit or mathematics. That is what makes the story exciting, as every aspect of the film has a physical dimension, by which I don't mean the three-dimensional one. Such a trip is always an adventure, as you can never tell how it will end.



## ACTORS



### ALBRECHT ABRAHAM SCHUCH Alexander von Humboldt

Albrecht Abraham Schuch was born in Jena in 1985. From 2006 to 2010 he studied at the Felix Mendelssohn High school for Music and Theatre in Leipzig. He's been acting in theatres since 2001. His engagements have taken him from Jena to Leipzig and then to the Maxim-Gorki-Theatre in Berlin, where he is currently appearing in *Legende vom Glück ohne Ende*, *Every man dies alone* a.k.a *Alone in Berlin*, *An Enemy of the People*, *Käthchen of Heilbronn* or *Trial by Fire*, *Rocco and his Brothers* and *Madame Bovary*. He has appeared on the screen in Robert Thalheim's *Westwind* and Alain Gsponer's *Lila, Lila*.

### FLORIAN DAVID FITZ Carl Friedrich Gauss

Florian David was born in Munich in 1974. He studied acting at the renowned Boston Conservatory from 1994 to 1998, graduating magna cum laude.

Florian David Fitz' performance as a Tourette's syndrome patient in *Vincent Wants To Sea* won him the German Film Awards' Best Actor Award. *Vincent Wants To Sea* also won the Best Film Award. It was nominated for a total of five categories, including one for Fitz for his debut script. Fitz also received a Bambi for best German actor and the Bavarian Film Award as an author. The film is not only a box office and critical success, but also was received the Public Prize at the Bavarian Film Awards. Fitz's directorial debut is *Jesus Loves Me*, based on the bestseller by David Safier.

Fitz also plays the lead in it. Fitz has appeared on screen in films including Peter Gersina's *Girls On Top 2*, where he played opposite Karoline Herfurth, and in Florian Hoffmeister's auteur film *3 Grad kälter* opposite Sebastian Blomberg and Bibiana Beglau. In 2009 he played successful advertising executive Niklas in Simon Verhoeven's popular success *Men In The City*, which garnered Fitz a Bambi nomination.

### JÉRÉMY KAPONE Bonpland

Kapone was born in Paris in 1990. He not only works as an actor, but also as a painter, lyricist and composer of his own songs. His EP *Element du décor* appeared in March 2009. His first album, *Simple Songe* followed in 2010.

In 2009 Kapone won the Young Talent awards at the Cabourg Film Festival for his performance in Lisa Azuelos' *LOL*. His band Kaponz & Spinoza contributed a song to the film's soundtrack.

Kapone appeared in the short *Summer Knows*, which was in Brooklyn Film Festival's 2011 competition. He also appeared in *Complices*, *Livide*, the television series *Tiger Lily*, the TV film *Le grand restaurant* and its sequel *Le grand restaurant II*.

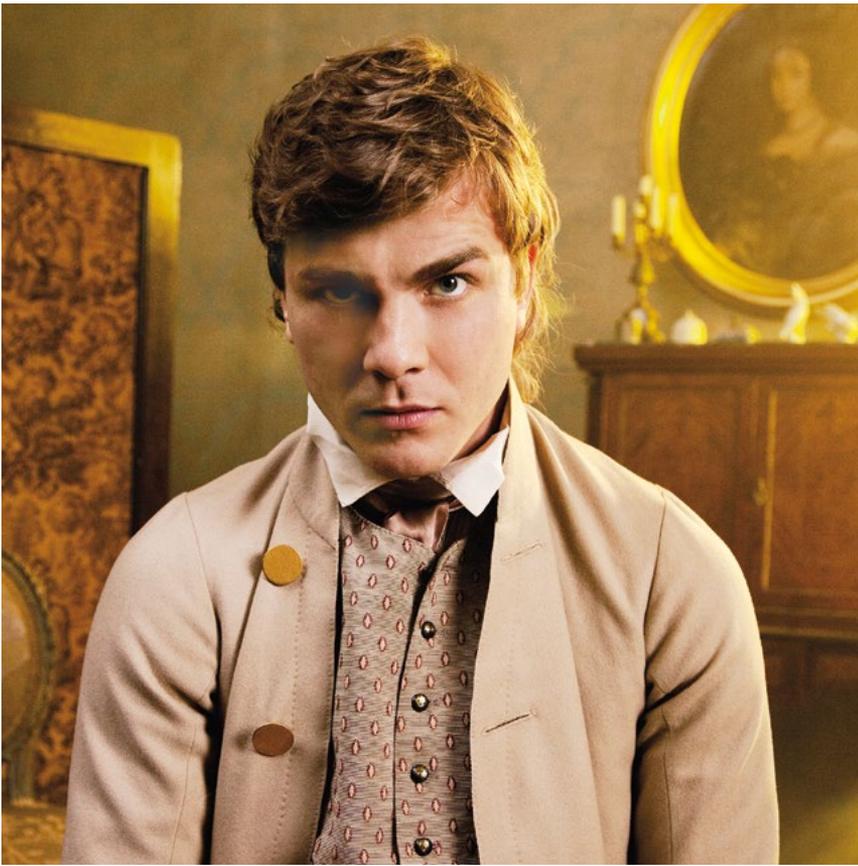
### VICKY KRIEPS Johanna

Vicky Krieps was born in Luxemburg in 1983. She studied acting from 2005 to 2009, whilst also acting at the Schauspielhaus Zürich.

The actress appeared in *Anonymous* in 2010 under director Roland Emmerich, following in William Shakespeare's footsteps, was in Joe Wright's 2010 action thriller *Hanna*, and also starred in the drama *If Not Us, Who?* by Andres Veiel, as well as Philippe de Pierpont's *Elle ne pleure pas, elle chante*. Ann-Kristin Reyel's drama *Formentera* had its world premiere at the 62nd Berlinale with Vicky Krieps as leading actress.

In 2008 she received the award of Best Youngster for the short *La nuit passée* by Eileen Byrne at the Busho Festival Budapest, and in 2012, she was awarded the Lëtzebuerger Filmpreis in the category Prix de Jeunes Espoirs.







## ACTORS



### DAVID KROSS

#### Eugen

Kross was born in 1990. He was found to be the perfect actor for the role of Michael Polischka in Detlev Buck's much discussed film *Tough Enough*, an unsparing look at a fraught side of Berlin. This film was awarded with three German Film Prizes, including one for Best Film as well as the FIPRESCI International Critics' Award in the Panorama section of the 2006 Berlinale Festival.

In *The Reader*, Kross played the young Michael Berg, who develops a special relationship with 36-year-old Hanna Schmitz (Kate Winslet). Under the direction of Oscar®-nominated Stephen Daldry, Kross gave a mature performance that won him international attention. Kross received awards including the Trophée Chopard, the Deutscher Hörfilmpreis Award and the largest Austrian cultural and media Prize in 2010, the Romy. He also acted in Buck's film *Same Same But Different*. In a Steven Spielberg's adaptation of Michael Morpurgo's *War Horse*, he played along side Jeremy Irvine, Emily Watson, Peter Mullan and David Thewlis. Kross took a leading role opposite Florian Lukas and Rupert Grint in the international production *Into The White* by *Elling* director Petter Naess.

(2007), *Strike / Strajk – Die Heldin von Danzig* (2006), *Sun Alley* (1999), *Kaspar Hauser* (1993), *Paradies* (1986), *Sophie's Choice* (1982), *Domino* (1982), *Angels of Iron* (1981), *The Tin Drum* (1979) and *The Second Awakening of Christa Klages* (1978). She has been awarded with numerous prizes including the Bavarian Film Award, the German Film Award and the Adolf Grimme Prize. Since the late 1980s, Katharina Thalbach has also been working as a director at prestigious theatres and opera houses.



### KARL MARKOVICS

#### Teacher Büttner

Karl Markovics was born in Vienna in 1963. He began his theatre career in 1982. Since 93 he has been appearing in various television and cinema productions. He received an Emmy nomination for Best Actor thanks to his performance of Franz Fuchs. *The Counterfeiters* (Stefan Ruzowitzky) was awarded the Oscar® for Best Foreign Language Film. In 2011 his own debut feature film *Breathing* (script and director) premiered in Cannes and received numerous international prizes.

### SUNNYI MELLES

#### Baroness von Humboldt

### KATHARINA THALBACH

#### Gauss' Mother

Katharina Thalbach's passion for acting runs in the family. When her mother died in 1966, Helene Weigel took over Katharina's education. She was discovered at 15 and acclaimed for the part of Polly in Erich Engel's production of the *Threepenny Opera*. It was followed by engagements at the Berliner Ensemble and the Volksbühne in Berlin. Her first big role on screen was in *It is an old Story* (1961). She was also in demand among film directors, and acted in the award winning productions: *The Moon And Other Lovers* (2009), *Hands Off Mississippi*

Sunnyi Melles was born to Hungarian parents (father a director, mother an actress) in 1958, in Luxemburg. She studied acting at the Otto-Falckenberg School. Even during her studies she became a member of the Münchner Kammerspiele ensemble, playing Gretchen in *Faust* and in *Troilus And Cressida*. Cinema films have included: *Rubbeldiekatz* by Detlev Buck, *Julia's Disappearance* by Christoph Schaub, *38 – Home to the Realm* by Wolfgang Glück, Oscar®-nomination, *Paradise* by Doris Dörrie. Television films have included *Cinéma: Les pianos de Berlin* with Alain Delon, and *Maigret* with Bruno Cremer. Awards have included Actress of the Year (Theater Heute) and the Nestroy Prize for Best Actress. She is the holder of the Bavarian Award of Merit.

## BEHIND THE CAMERA



### DETLEV BUCK

#### Director

Detlev Buck is an actor, author, director and producer. After studying at the DFFB, he founded Boje Buck Produktion with Claus Boje. They have been jointly running it ever since. Detlev Buck has received numerous prizes for his films, including the Bavarian Film Award for his first feature-length film, *Karniggels* (1991), as well as the German Film Award (silver) for Best Film for *Wir können auch anders* (1993) and *Tough Enough* (2006). As an actor, Detlev Buck received in 2004 the German Film Award (gold) for Best Supporting Actor (as Karl in *Berlin Blues*. With *Same Same But Different* (2009) Buck directed his first film outside Germany. The film garnered the Piazza Grande Award in Locarno. In 2011 it was followed by the very successful cinema comedy *Woman In Love*.

### DANIEL KEHLMANN

#### Script, original novel

Daniel Kehlmann was born in Munich in 1975 to director Michael Kehlmann and actress Dagmar Mettler. In 1981 he and his family moved to Vienna, where he visited the Kollegium Kalksburg, a Jesuit school. He then attended the Universität Wien where he studied philosophy and German studies.

His novel, *Beerholms Vorstellung* was published in 1997. Kehlmann was a writer in residence in Mainz, Wiesbaden and Göttingen, and was awarded numerous prizes including the Candide Prize, the Konrad-Adenauer-Stiftung Prize, the Doderer Prize, the Kleist Prize in 2006, and, more recently, the Welt-Literaturpreis in 2007. Kehlmann's reviews and essays appear in various magazines and papers, including *Der Spiegel*, *The Guardian*, *Frankfurter Allgemeine Zeitung*, *Süddeutsche Zeitung*, *Literaturen* and *Volltext*.

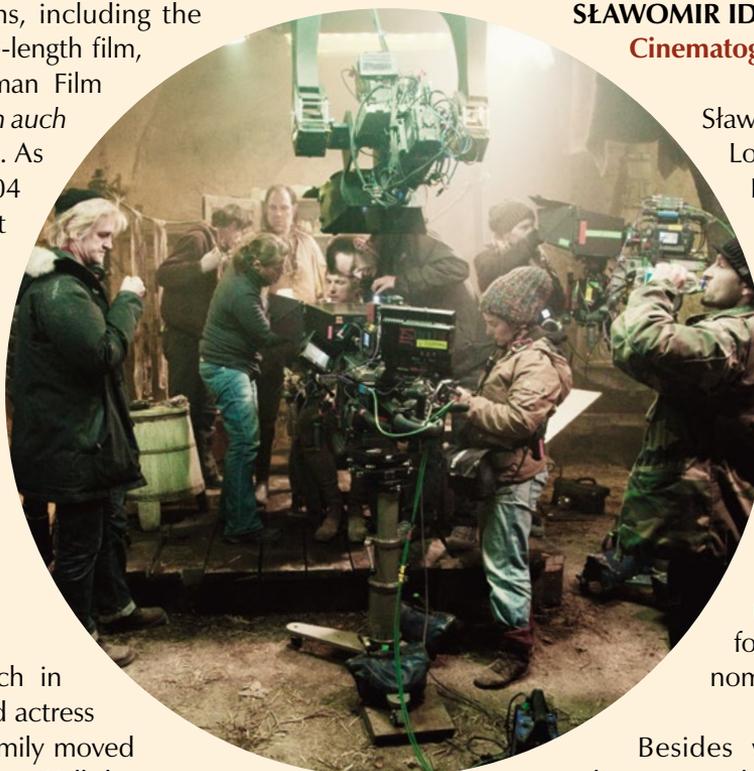
His novel *Me And Kaminski* was an international success, his novel *Measuring The World* has hitherto been translated into 14 languages, making it one of the most successful German novels of the post-World War II era. Daniel Kehlmann lives and writes in Vienna and Berlin.

### SŁAWOMIR IDZIAK

#### Cinematographer

Sławomir Idziak attended the film school in Lodz in the 1960s with director Krzysztof Kieslowski. Their first joint film was *The Scar* (1976). As the two worked together, Sławomir Idziak developed the experimental composition techniques that caused such sensation in the cinema version of *Krótki film o zabijaniu* (*A Short Film about Killing – Dekalogue 5* (1988)). The films *Double Life Of Veronique* (1991), and *Three Colours: Blue* (1993) were also well received, in part thanks to their piercing composition. In 1993 Idziak won the Camera Prize at the Venice Film Festival for *Three Colours: Blue*, and he was also nominated for the French César.

Besides working with the renowned Polish director, and participating in projects in Germany, where he worked as a cinematographer on films including Detlev Buck's *Jailbirds* (1996) and *Love Your Female Neighbor* (2000) Idziak also began to work in Hollywood: after *Gattaca* (1997, Andrew Niccol), *I Want You* (1998, Michael Winterbottom) and *Proof of Life* (2000, Taylor Hackford) his work on *Black Hawk Down* (2001, Ridley Scott) helped him attain new heights: he was nominated for an Oscar and for the British Film Academy award. This he followed with Antoine Fuqua's *King Arthur* (2004) and David Yates' *Harry Potter And The Order Of The Phoenix* (2007). For the last two years, Idziak has been working exclusively in 3D. In 2011 he filmed the first Polish 3D film, the war epic *Battle of Warsaw 1920*.





## CAST & CREW



Alexander von Humboldt *Albrecht Abraham Schuch* Alexander von Humboldt (as a child) *Aaron Denkel* Carl Friedrich Gauss *Florian David Fitz*  
Carl Friedrich Gauss (as a child) *Lennart Hänsel* Aimé Bonpland *Jérémy Kapone* Johanna *Vicky Krieps* Eugen *David Kross* Translator *Agj Dawaachu*  
Lama *Baldanpurev Sambuu* Teacher Büttner *Karl Markovics* Johanna (as a child) *Mercedes Jadea Diaz* Humboldt's mother *Sunny Melles*  
Tutor Kunth *Nils Dreschke* Wilhelm von Humboldt (as a child) *Paul von Mikulicz* Duke *Michael Maertens* Military Man *Max Giermann*  
Mother of Gauss *Katharina Thalbach* Father of Gauss *Guntbert Warns*



A Film by *Detlev Buck* Screenplay *Daniel Kehlmann, Detlev Buck, Daniel Nocke* Producers *Claus Boje, Detlev Buck* Co-producers *Erich Lackner, Tommy Pridnig, Peter Wirthensohn* Commissioning editor WDR *Michael André, WDR* Line producers *Jan Brandt, Martin Rohrbeck, Sonja Schmitt* Script development *Wenka von Mikulicz* Casting *Simone Bär* Production design *Udo Kramer* Costume design *Thomas Oláh* Make-up *Monika Fischer-Vorauer, Michaela Oppl* Director of Photography *Śławomir Idziak* Sound *Paul Oberle* Editor *Dirk Grau* Re-Recording Mixer *Martin Steyer* Sound design *Christian Conrad, Dominik Schleier* Music *Enis Rotthoff*

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**THE MATCH FACTORY**

#### **TECHNICAL DETAILS**

Format: 3D  
Running Time: 123 min  
Genre: Drama  
Sound: Dolby SRD  
Ratio: 1:2.39 Scope

#### **PRODUCTION COMPANY**

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