Fact-Checked Science

EVIDENCE REVIEW · S0 SPECIAL REPORT, 9 NOVEMBER 2026

S0's special report, November 9, 2026: the field weakens slowly, and no pole shift is near

On November 9, 2026, S0's special report called the field's decline "Earth's ongoing geomagnetic excursion" and traced it from 10% lost by the late 1990s to a loss "10 times faster" and a pole shift "one punch of the gas pedal away" [1 00:00:18–00:00:21] [1 00:01:26–00:01:28] [1 00:03:40–00:03:43]. Its starting point holds up: from the mid-1800s to 1998 the dipole lost about 8%, about 5% a century (our analysis) [14] [10]. The rest doesn't. Its 15% and its "5% per decade" come from ESA (its 2012 Swarm brochure, and the linked page from 2014) and a reporter's sentence of 2014 [8 p. 4] [4 ¶5] [5 ¶5], the pole's "accelerative jumps" match the steps in how one model joins its five-year snapshots, and the dipole is weakening as forecast while the pole slows (our analysis) [13] [10].

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OUR ANALYSIS marks our own reasoning and calculations, including our runs of the IGRF-14, COV-OBS.x2, CHAOS-8.7 and gufm1 field models, and the verdicts are our assessment: three restate the site's earlier checks. Everything else comes from the numbered sources. For the report [1], times are positions in the video; for S0 News's research note [2], its own section and figure names; for web articles, ¶ gives a paragraph; for papers, p. gives a page, § a section, and Abstract or another heading the part we read.

The field is weakening slowly and on forecast, not racing toward a pole shift

OUR ASSESSMENT

0.46%
Our analysis: the dipole's loss per decade over 2014–2026 in IGRF-14 and CHAOS-8.7 [10] [13]. The report's "5% per decade" is a reporter's sentence of 2014 [5 ¶5].

6 of 6
Our analysis: the jumps of more than 5 km a year in IGRF-14's yearly pole speed since 1900 that fall at one of its five-year joins, where it switches from one straight line to the next [10]. Continuous models show none [13] [14].

12.7 nT
Our analysis: how much the axial dipole weakened in 2025 in CHAOS-8.7, against the 12.6 nT a year that IGRF-14 forecast: less than half its pace of 1915–20 and about half that of 1970–75 [13] [10].

THE REPORT'S CLAIMS

FALSE

An excursion is under way now

"this is a special report on the magnetic pole shift, Earth's ongoing geomagnetic excursion by the numbers" [1 00:00:17–00:00:21]

An excursion is a spell when the field's pole strays far from the geographic pole, more than about 45°, with the dipole at about half today's strength [21 §4.4]. Today the dipole's axis is tilted 9.2°, less than in 1900, and its moment, 7.69 ×10²² A m², is about twice the level a 2026 study calls a reasonable, though not universal, threshold for transitional events (our analysis) [10] [22 p. 14]. The same claim is rated False on our review of October 22 and our guide to the field. See section 2.

OVERSTATED

Little to no change before 1840

"But detailed reconstructions of prior centuries showed little to no change in the field strength." [1 00:00:42–00:00:48]

A fair summary of the paper the report links, which found the strength "nearly constant" from 1590 to 1840 [25 Abstract], but of one reconstruction. Its co-author's 2008 re-analysis of the same data widened the uncertainty to about ±42 nT a year, while still finding no change the most probable [37]; later studies split, some finding a fall of about 12 nT a year since 1590 (11–15 in Laj and Kissel's summary) [26] [24 Introduction]. Our check of the paper rates the report's next two sentences: "Mid-1800s pole shift began" Misread, for its "pole shift", and "No dramatic change before 1840" Misleading. See section 4.

FALSE

15% gone, ten times faster

"Now by the year 2010 that total field loss number had gone up to 15%" … "their team leader was quoted as saying that we had gone from losing 5% per century to 5% per decade. This is a 10x increase" [1 00:00:55–00:01:00] [1 00:01:12–00:01:20]

ESA's 15% is for "the last 150 years": in ESA's Swarm brochure from October 2012, before Swarm launched, and on the linked page only from 2014 [8 p. 4] [4 ¶5]; over 1863–2013 the dipole lost 8.9% (our analysis) [14] [13]. The 5% a decade is *Live Science*'s own sentence, not a quotation of ESA's mission manager [5 ¶5]. Since 2014 the dipole has lost 0.46% a decade (our analysis) [10]. The same verdict as step 6 of our video check. See sections 5 and 6.

FALSE

One more jump to a pole shift

"These accelerative jumps with the slight exhale of a slowdown in between have gotten bigger and bigger. One more of those is what we're worried about. If we get another amplification of this pattern, like the last three cycles, it is the final acceleration, meaning we would be just 5 to 10 years away." [1 00:01:57–00:02:12] "Magnetic pole shift is one punch of the gas pedal away." [1 00:03:40–00:03:43]

The jumps match the note's chart of the north dip pole's yearly speed, which the note itself calls "step-shaped from 5-yr interpolation" [2 Methods]: continuous models show a smooth rise to about 58 km a year in 2002–03, lower crests since, and a fall to about 35 (our analysis) [13] [14]. Halving the dipole within 5–10 years would take 106–194 times the forecast pace (our analysis) [10]. See section 7.

MISLEADING

The field loss is accelerating

"Not only should it be plainly obvious that the field loss rates down there at the bottom are getting wonky, but what's next in this pattern? Another accelerative rise. And what happens when we get another one? And what if it's even bigger?" [1 00:02:32–00:02:46]

The dipole's loss has picked up since 2018, from about 6 to 13 nT a year, as IGRF-14 forecast (our analysis) [13] [10]. But on the note's chart the earlier rises peak higher, at about 29 nT a year around 1915 and 23 around 1970 (IGRF-14's five-year rates: 30.4 in 1915–20 and 24.0 in 1970–75), and the note itself says the 20th century was fastest [2 Figure 5] [10]. The same verdict as our check of the presenter's field-loss figures. See section 8.

OVERSTATED

100× acceleration at the end

"Peer-reviewed science on the final acceleration suggests changes accelerate by 100x at the end." [1 00:03:02–00:03:06]

The report names no paper. Very likely its source is Davies and Constable (2020), the only peer-reviewed "almost 100 times" we found (our identification). In its simulations the field's direction at one place can turn up to about 10° a year, "almost 100 times faster than current changes", typically while the field is weakening [28 Abstract]. The spikes are rare and local, and concern direction, not strength. They cluster in weak-field times near excursions, but in most simulations they come thousands of years from any reversal [28 Results] [28 Discussion]. Nothing in the paper describes a final hundredfold acceleration of a pole shift, let alone one beginning now. See section 9.

1 · THE REPORT

Four minutes, five links, and two charts we haven't seen

S0's special report "Pole Shift - Part 1" went up at 11:02 UTC on November 9, 2026, and ran about four minutes; there was no S0 News episode that day [1]. Its description links S0 News's research note 007, three popular articles from 1998, 2013 and 2014, and a 2006 paper in *Science* [1].

In the report's words

Quoted from tactiq.io's automatic transcript, which writes GrokBot as "Grockbot". Times are positions in the video [1].

> "Where things began, how far things have come to now, and what we're watching closely in the next few years."
>
> The report [1 00:00:25–00:00:26]

> "Now, that's what most of us here at the channel have been working with. And with indirect inference of field conditions through space weather and the ionosphere."
>
> The report [1 00:01:28–00:01:37]

> "So, here is where the Grockbot team comes in. Today's offering isn't a correlation or a data set, but an accounting of relevant magnetic changes on Earth."
>
> The report [1 00:01:36–00:01:45]

The five links, and where each is checked

THE DESCRIPTION'S LABEL	WHAT IT LINKS	WHERE WE CHECK IT
"Ben's GrokBot Team 007"	S0 News's research note 007, credited to an "internal GrokBot Team" [2]	Our check of the note; its two charts as the report reads them, sections 7 and 8
"10% Lost"	*Scientific American*, an "Ask the Experts" answer of October 5, 1998 [3]	Section 3
"15% Lost"	ESA's web page "Our protective shield" [4]	Section 5
"5%/decade"	*Live Science*, July 8, 2014 [5]	Section 6
"Mid-1800s Pole Shift Began"	Gubbins, Jones and Finlay (2006), *Science* [25]	Our check of the paper; section 4

What we could see, and what we couldn't

We worked from the report's automatic transcript, supplied by the site's owner, and didn't watch the video, so we know its graphics only from the narration [1]. Two of them match charts in the note by their description: the north magnetic pole's speed, its Figure 3, and the "dual line graph" of the dipole and its rate of loss, its Figure 5 [2 Figure 3] [2 Figure 5]. We say "matches", not "is". Where the narration points at a picture, "this" or "over there", we can't tell what was shown.

Quoted, not rated

"Right now, folks, just about every day, I end these shows talking about resources linked below." [1 00:03:14–00:03:19] "It's also in a pinned comment up at the top of the comment section. Yesterday it was scanned. Solarkillshot.org." [1 00:03:33–00:03:38] The last two sentences are garbled in the transcript; the description links a site of that name to "Network with other Observers near you" [1]. The sign-off: "Eyes open. No fear." [1 00:04:02]

The indirect inference through "space weather and the ionosphere" is context, not a claim we can check here. Our review of November 1 rates its version, "Aurora shows pole shift's speed", False.

2 · AN ONGOING EXCURSION?

The field is weakening, but nothing measured is near an excursion

The report opens by calling the pole shift "Earth's ongoing geomagnetic excursion" [1 00:00:18–00:00:21]. An excursion is a measurable state of the field, and today's field is far from it.

THE DIPOLE'S TILT, 2025
OUR ANALYSIS
9.2°
Down from 11.4° in 1900 and 10.5° in 2000: the axis is moving toward the rotation axis, not away from it [10]. In an excursion the pole strays more than about 45° [21 §4.4].

THE DIPOLE MOMENT, 2025
OUR ANALYSIS
7.69 ×10²² A m²
About twice the 4 ×10²² A m² that one 2026 study calls "a reasonable threshold for defining transitional geomagnetic events", though not a universal one [10] [22 p. 14].

HOW FAR THE POLES MOVED, 1900–2025
OUR ANALYSIS
320 km
The geomagnetic pole, the dipole's axis, against 2,503 km for the north dip pole, whose path is set by local changes in the core's field [10] [20].

What the specialists say

A 2018 study of past excursions in global field models is titled "Earth's magnetic field is probably not reversing", and infers that today's field is not in the early stage of a reversal or an excursion [23]. A 2015 study that takes the fast decline seriously, and tentatively suggests that the processes behind a polarity change "may have already started", still expects no reversal or excursion "before 500–1000 years" [24 Abstract]. A 2019 study of the dipole's long-run trends puts the chance of a reversal in the next 20,000 years at about 2% [34].

OUR ANALYSIS

The same claim, the same verdict

"An excursion is under way now" is False on our review of October 22, October 23 and our guide. Where an episode said only that a pole shift is under way, our reviews of October 20 and October 24 rated it Misleading, because the poles do move. This report names the shift an excursion, so the stricter verdict applies.

3 · *SCIENTIFIC AMERICAN*, 1998

"About 10 percent over the past century": the dipole lost about 6% in that century, and about 8% since the mid-1800s

"It was widely reported in the late 90s that Earth had lost about 10% of magnetic field protection compared to what Earth enjoyed in the middle of the 1800s." [1 00:00:28–00:00:36] The link behind it is a *Scientific American* answer of October 5, 1998 [3].

What the article says

Richard C. Brill, then an associate professor of geology and geophysics at Honolulu Community College, answered the question in the title [3 ¶1]. An unattributed caption, under an image credited to the National Geophysical Data Center, says computer models "indicate that the strength of Earth's magnetic field declined about 10 percent over the past century" [3 caption 1]. Brill's own text is narrower: "At most places there has been a general decrease in the strength over the past century, typically ten percent or so." [3 ¶5]

And how carefully

Brill writes that "it is not easy to say how the field of the Earth as a whole is changing" [3 ¶2], and that "No one can say with any certainty whether this represents a fluctuation or whether it is a decrease which will eventually lead to a reversal." [3 ¶5] The article says nothing about the middle of the 1800s. A NASA story of 2003 did the field, it said, "has weakened 10% since the 19th century" [9].

The century the article describes, in the field models

Scroll sideways to see the whole table →

SPAN (MODEL)	DIPOLE MOMENT	AXIAL DIPOLE	AVERAGE AT THE SURFACE	SHARE OF THE SURFACE THAT WEAKENED	SHARE THAT LOST 10% OR MORE	MEDIAN CHANGE WHERE IT WEAKENED
1898–1998 (COV-OBS.x2)	−6.2%	−6.0%	−5.3%	70%	27%	−8.7%
1900–2000 (IGRF-14)	−6.4%	−6.1%	−5.4%	70%	28%	−8.7%
1900–2000 (COV-OBS.x2)	−6.3%	−6.0%	−5.3%	70%	27%	−8.7%

Our analysis of COV-OBS.x2 and IGRF-14 [14] [10]. Field strength at the surface on a 1° grid to degree 13, weighted by area. Over the whole surface the median change was −4.4 to −4.6%; the largest loss was about 30%, in the ocean south of Africa, and the largest gain about 9%, over Arabia.

OUR ANALYSIS

The caption overstates the century; the text fits where the field weakened

Measured, the dipole lost about 6% over the century the article describes, and the average field at the surface about 5.3%, so the caption's "about 10 percent" is more than half as much again (our analysis) [14] [10]. Brill's sentence holds better: about 70% of Earth's surface weakened, the typical loss there was 8.7%, and over a quarter lost 10% or more. The report moved the start to the middle of the 1800s, and that version is closer still: from 1850 to 1998 the dipole lost about 8%, as section 10 shows.

4 · BEFORE 1840

One reconstruction found the strength nearly steady before 1840; later work is split, and the field's direction never stood still

"But detailed reconstructions of prior centuries showed little to no change in the field strength. Whatever is happening began right there in the middle of the 1800s." [1 00:00:42–00:00:50] The link, "Mid-1800s Pole Shift Began", is Gubbins, Jones and Finlay (2006) [1] [25]. Our panel rates the first sentence; our check of the paper rates the second, "Mid-1800s pole shift began", Misread for its "pole shift", and the third, "Before that we were not in a dramatic magnetic change as a planet" [1 00:00:53–00:00:55], "No dramatic change before 1840", Misleading.

What the 2006 paper found

The authors combined a global model of the field's direction with measurements of past field strength, and found that the field's strength was "nearly constant" from 1590 to 1840, in contrast to the decline since [25 Abstract]. They traced the later fall to patches of reversed magnetic flux at the core's surface in the Southern Hemisphere [25 Abstract]. Read in full for our check of the paper, it never mentions a pole shift, an excursion or a reversal, and it dates the change in the core's southern hemisphere to about 1800 [25].

What later work found

The paper's co-author re-analysed the same 315 measurements in 2008 and found the slope far less certain, about ±42 nT a year, still finding no change the most probable, but with the odds between no change and gufm1's 15 nT a year about even [37]. A 2011 re-analysis is titled "Consistent treatment of errors in archaeointensity implies rapid decay of the dipole prior to 1840" [26], a 2018 study "Continuous millennial decrease of the Earth's magnetic axial dipole" [27], and later papers put the 2011 result at a decline of about 12 nT a year since 1590 (11–15 in Laj and Kissel's summary, a 2015 study) [24 Introduction], not far from the pace since 1840, about 15 nT a year (our arithmetic) [14] [10]. Other studies find the field roughly steady, and Jackson and Finlay's 2015 review chapter calls the question open, as our check of the paper sets out. So "reconstructions", in the plural, showing "little to no change" overstates one uncertain result.

LONDON'S COMPASS, 1590–1820
OUR ANALYSIS
About 36°
From east of north to west of it; since 1840 it has swung back 24.5°, to just east of north in 2025 [15] [10].

THE DIPOLE'S TILT, 1590–1840
OUR ANALYSIS
4.6° to 11.3°
Its pole moved 918 km in those 250 years; since 1840 the tilt has eased to 9.2° [15] [10].

THE SOUTH ATLANTIC WEAK SPOT
OUR ANALYSIS
30° west
Its weakest point moved from about 12.5° E in 1700 to 17.5° W in 1840, before any measurement of strength [15].

OUR ANALYSIS

The timing roughly fits; the "pole shift" doesn't

The report's timing for the dipole's faster fall roughly matches the paper's own account: in COV-OBS.x2 the axial dipole barely moves from 1840 to 1860 and falls faster from about 1860 (section 8) [14]. What the paper doesn't describe is a pole shift; it never mentions one [25]. Before 1840 the strengths in gufm1, the model the paper used for directions, follow an assumed 15.2 nT a year, since instrument measurements of strength began only in the 1830s [2 Methods] [15]. And by direction the field was changing as much before 1840 as after: "Before that we were not in a dramatic magnetic change as a planet" [1 00:00:53–00:00:55] fits the strength in one reconstruction, not the field. The paper itself is rated on our check of the paper.

Our check of Gubbins, Jones and Finlay (2006)

WHAT IT IS

A peer-reviewed report in *Science*, "Fall in Earth's magnetic field is erratic", combining a model of the field's direction since 1590 with 315 measurements of past field strength [25]. The report's link "Mid-1800s Pole Shift Began" [1].

WHAT THE REPORT SAID

"But detailed reconstructions of prior centuries showed little to no change in the field strength. Whatever is happening began right there in the middle of the 1800s. Before that we were not in a dramatic magnetic change as a planet." [1 00:00:42–00:00:55]

WHAT OUR CHECK FOUND

The paper never mentions a pole shift. Later work supports its southern reversed-flux origin, though the mechanism is debated. Its co-author's 2008 re-analysis of the same data widened the slope's uncertainty to about ±42 nT a year, while still finding no change the most probable [37], and later studies split. The report's timing for the faster fall roughly matches the paper's own account.

In our check of the paper: "Strength nearly steady 1590–1840" Unconfirmed; "Reverse flux in south drove fall" True; "Little to no change before 1840" Overstated; "Mid-1800s pole shift began" Misread; "No dramatic change before 1840" Misleading. The first two are the paper's own claims.

5 · ESA, 2013

ESA's 15% is for the 150 years before 2012, about 1.7 times the dipole's loss, and not a Swarm measurement

"Now by the year 2010 that total field loss number had gone up to 15% 150 to 200 years to lose 10% but only a decade to lose another five. This is the official ESA swarm mission by the way" [1 00:00:55–00:01:09]. The link, "15% Lost", is ESA's page "Our protective shield" [1] [4].

What ESA's page says, and when

"Today, there are concerns that the force that protects our planet is weakening and may even be on the verge of reversing polarity. Over the last 150 years, the magnetic field has lost about 15% of its strength." [4 ¶5] The page is dated October 23, 2013, but its 2013 version, then titled "Understanding Earth's protective shield" (archived November 1, 2013 and April 24, 2014), has no 15%. The sentence arrived when the page was rewritten in 2014 with Swarm's June results; the old address redirected to today's page by August 13, 2014 [4] [4 ¶10]. It first appeared in ESA's Swarm brochure of October 2012 [8 p. 4].

ESA's own later figure

In May 2020 ESA put the loss at "around 9%" over 200 years, "on a global average" [7 ¶4], and called the dip in the South Atlantic "well within what is considered normal levels of fluctuations" [7 ¶9]. Swarm's satellites launched on November 22, 2013 [6]: after the 15% was first published, and after 2010. ESA's 2020 release also calls a reversal "long overdue" by the average rate [7 ¶9].

ESA's two figures, in the field models

SPAN (MODEL)	DIPOLE MOMENT	AXIAL DIPOLE	AVERAGE AT THE SURFACE
1863–2013, ESA's "last 150 years" (COV-OBS.x2, then CHAOS-8.7)	−8.9%	−8.4%	−7.8%
1840–2020, ESA's 2020 figure (COV-OBS.x2)	−9.3%	−8.7%	−8.1%
1820–2020 (gufm1, then IGRF-14)	−10.1%	−9.6%	−8.9%
2000–2010, the report's "decade to lose another five" (IGRF-14)	−0.56%	−0.41%	−0.46%

Our analysis of COV-OBS.x2, CHAOS-8.7, gufm1 and IGRF-14 [14] [13] [15] [10]. The 1820 values rest on gufm1's assumed trend before 1840. CHAOS-8.7 gives the same 2000–2010 losses as IGRF-14.

OUR ANALYSIS

Not by 2010, not from Swarm, and not a decade's loss

The report's timeline subtracts one article from another: *Scientific American*'s 10% for the century to 1998 [3 caption 1] and ESA's 15% for the 150 years before 2012, on the linked page from 2014 [8 p. 4] [4 ¶5]. They cover different spans and come from different sources, so the 5-point gap between them was never a loss within a decade; from 2000 to 2010 the dipole lost 0.56% [10]. ESA's 15% is about 1.7 times the dipole's loss over its own 150 years, and 1.9 times the average field's. Locally it fits: over 1863–2013 about 27% of the surface lost 15% or more, with the largest loss, 37%, in southern South America [14]. ESA's later 9% over 200 years matches the models.

6 · *LIVE SCIENCE*, 2014

"5 percent per decade" is the reporter's sentence; since 2014 the dipole has lost about 0.46% a decade

"This is the official ESA swarm mission by the way at which point their team leader was quoted as saying that we had gone from losing 5% per century to 5% per decade. This is a 10x increase after the initiation in the mid 1800s." [1 00:01:07–00:01:23] The link, "5%/decade", is a *Live Science* story of July 8, 2014 [1] [5].

Who says what in the story

The figure is in the reporter's own paragraph: "Previously, researchers estimated the field was weakening about 5 percent per century, but the new data revealed the field is actually weakening at 5 percent per decade, or 10 times faster than thought." [5 ¶5] Rune Floberghagen, ESA's Swarm mission manager, is quoted on how long a flip takes, "many hundred if not a few thousand years" [5 ¶6], and on a field weakening over the Americas [5 ¶10]. The story paraphrases Floberghagen as hoping more data will show "why the field is weakening faster now" [5 ¶6], but it gives no rate in the mission manager's name.

What ESA said that June

ESA's release on Swarm's first six months said the measurements "confirm the general trend of the field's weakening, with the most dramatic declines over the Western Hemisphere", while the field had strengthened over the southern Indian Ocean [6 ¶3] [6 ¶4]. It quoted Floberghagen only on the satellites' "excellent performance" [6 ¶8], and gave no rate per decade.

IGRF-14, 2014–2026
OUR ANALYSIS
0.465%
The dipole moment's loss per decade, from 7.729 to 7.685 ×10²² A m² [10]. At 5% a decade it would have lost 6% [10].

CHAOS-8.7, 2014–2026
OUR ANALYSIS
0.455%
The same loss from the model built on Swarm's own data: about a tenth of 5% a decade [13].

CHAOS-8.7, 2000–2013, YEARLY
OUR ANALYSIS
4.9–6.1%
The dipole's loss a century, year by year, in the decade the report says turned ten times faster: no tenfold rise [13].

These reproduce our check of the presenter's field-loss figures, which read the story the same way in October 2026, and step 6 of our video check. NASA's Earth Observatory gave the global decay that year as about 5% a century [36].

7 · THE POLE'S "JUMPS"

The jumps match how one model is interpolated, and the pole has been slowing for a decade

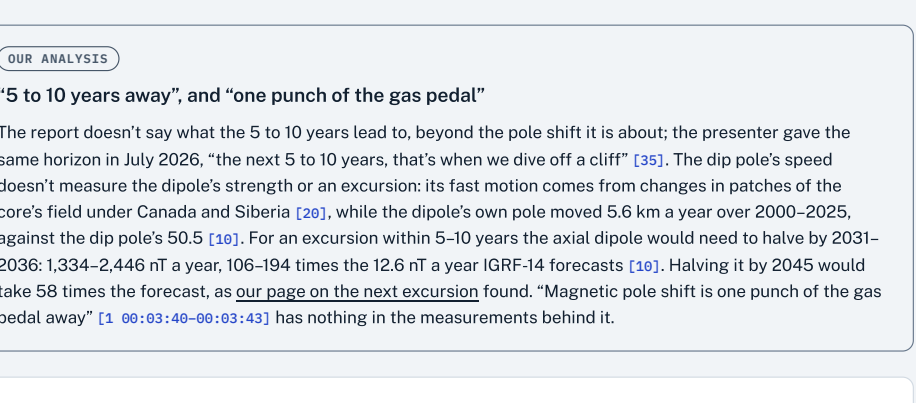
"First, the magnetic north pole movement since the initiation of the pole shift. These accelerative jumps with the slight exhale of a slowdown in between have gotten bigger and bigger. One more of those is what we're worried about. If we get another amplification of this pattern, like the last three cycles, it is the final acceleration, meaning we would be just 5 to 10 years away." [1 00:01:52–00:02:12]

The chart this matches

The note's Figure 3 plots the north dip pole's speed from one January 1 to the next: from gufm1 to 1900 and from IGRF-14 after, with a peak of 58.5 km a year in 2010–11 [2 Figure 3] [2 Claims 4]. IGRF-14 gives the field every five years and joins them with straight lines, and the note says what that does: "IGRF-14 yearly speed is step-shaped from 5-yr interpolation" [2 Methods].

How fast the north dip pole moved, year by year, 1960–2030

OUR ANALYSIS



Kilometres a year, from one January 1 to the next

Our analysis of IGRF-14 [10], COV-OBS.x2 (DTU Space, CC BY 4.0) [14] and CHAOS-8.7 (DTU Space, CC BY 4.0) [13], with the conventions of our check of the note, which gives the details: the dip pole where the field points straight down on the WGS84 ellipsoid, each model to its own degree (IGRF-14 13, COV-OBS.x2 14, CHAOS-8.7 20), and great-circle distances. Not the note's figure, which we don't reproduce. Hover or tap a point for its value.

WHERE IGRF-14'S CHANGE FALLS
OUR ANALYSIS
6 of 6
Jumps of more than 5 km a year at a five-year join; there falls 93% of the squared year-to-year change in 1900–2030 (70% of the change itself), at joins that are a fifth of its years [10]. A share this high follows from straight-line joins by construction; the test is the smooth-curve control, 29% (our check of the note), and the continuous models.

JUMPS IN CONTINUOUS MODELS
OUR ANALYSIS
None
The largest rise from one year to the next is 4.5 km a year in COV-OBS.x2 and 3.6 in CHAOS-8.7, spread over several years, against IGRF-14's 21.9 in a single step [14] [13] [10].

THE POLE'S SPEED, 2025–26
OUR ANALYSIS
34.9 km a year
In CHAOS-8.7, down from 57.8 in 2002–03; IGRF-14 forecasts 29.9 for 2029–30 [13] [10].

What the measurements and forecasters say

Ground surveys put the pole's average drift at 9.1–9.3 km a year from 1904 to 1973, 11.3 and 14.9 km a year over the next two decades, then 51.5 and 52.0 km a year over 1994–2001 and 2001–2007 [18 Table 6]: one large rise, measured years apart, so the surveys can show the rise but not steps. The IGRF-14 paper puts the peak at 56 km a year in 2002.5 and forecasts "continued deceleration", to 31 km a year in 2027.5 [11 §4]. NOAA and the British Geological Survey put its average speed from 2025 to 2026 at 36 km a year, easing to "just above 30 km/year by the end of the decade" [19 p. 3] [19 p. 12].

OUR ANALYSIS

"Bigger and bigger", read on the continuous models

What is real is one smooth rise, from about 15–20 km a year around 1990 to about 58 in 2002–03, then wiggles of a few km a year with lower crests, 57.8, 54.3 and 52.1 km a year in 2002–03, 2012–13 and 2016–17 in CHAOS-8.7, and a fall since [13]. On the note's own chart, the last three IGRF steps, in 2000, 2010 and 2015, are each smaller than 1995's, and after 2015 the speed only falls [10]. No series we ran shows jumps growing.

OUR ANALYSIS

"5 to 10 years away", and "one punch of the gas pedal"

The report doesn't say what the 5 to 10 years lead to, beyond the pole shift it is about; the presenter gave the same horizon in July 2026, "the next 5 to 10 years, that's when we dive off a cliff" [35]. The dip pole's speed doesn't measure the dipole's strength or an excursion: its fast motion comes from changes in patches of the core's field under Canada and Siberia [20], while the dipole's own pole moved 5.6 km a year over 2000–2025, against the dip pole's 50.5 [10]. For an excursion within 5–10 years the axial dipole would need to halve by 2031–2036: 1,334–2,446 nT a year, 106–194 times the 12.6 nT a year IGRF-14 forecasts [10]. Halving it by 2045 would take 58 times the forecast, as our page on the next excursion found. "Magnetic pole shift is one punch of the gas pedal away" [1 00:03:40–00:03:43] has nothing in the measurements behind it.

Our check of S0 News's research note 007

WHAT IT IS

An undated Google Doc credited to an "internal GrokBot Team", with no peer review, computing the South Atlantic Anomaly, the north dip pole and the dipole from gufm1 and IGRF-14 [2].

WHAT THE REPORT SAID OF IT

"an accounting of relevant magnetic changes on Earth. the overall field, the magnetic poles, the South Atlantic anomaly. And there are two things I want to stress here." [1 00:01:43–00:01:52]

WHAT OUR CHECK FOUND

Every number we compared reproduces from the public model files, seven of them once the note's unstated conventions were found. Its 1800 figures are modelled, not measured: with published rates before 1840 they run from about 6,500 to 7,250 nT and 4.5 to 6.0 times, the note's inside that range, and the note states its assumption. Its "tenfold" compares the 2002 peak with the 1800s' modelled average; the pole now moves about 6.7 times that, and is slowing.

In our check of the note: "7,100 nT deeper, sixfold wider" True; "North pole sped up tenfold" Misleading; "SAA deeper, wider or faster" True; "SAA tied to a possible reversal" Misleading; "One more jump to a pole shift" False; "The field loss is accelerating" Misleading. The last two are this report's readings of the note's charts.

8 · THE DUAL GRAPH

The dipole's loss has picked up since 2018, as forecast, to about half its earlier peaks or less

"The other thing to show is a dual line graph showing overall field strength on top and rate of field loss at the bottom. Left side of the chart is flat for both when not much was happening." [1 00:02:12–00:02:23]

The chart this matches

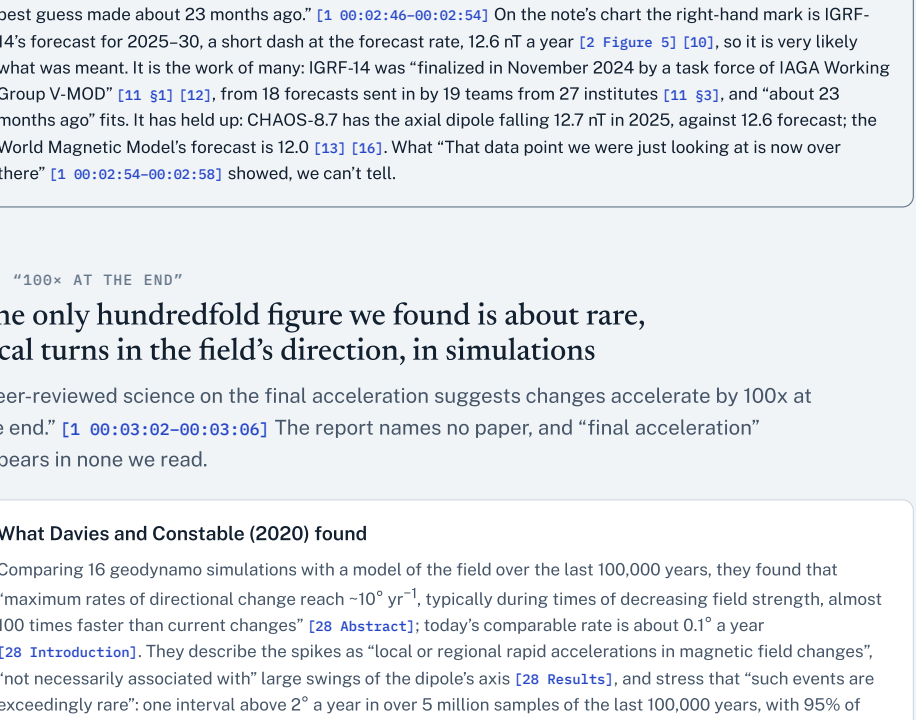
The note's Figure 5 plots the axial dipole, the main part of Earth's field, from 1590 to 2030, with its rate of loss below [2 Figure 5]. Its flat left side is one straight slope fitted over 1590–1840, 2.28 ± 2.72 nT a year, "including zero and growth", drawn beside gufm1's assumed 15.20 nT a year; the figure itself says "Pre-1840 flit is not annual observed data" [2 Figure 5]. The paper's co-author later widened that slope's uncertainty to about ±42 nT a year [37].

The note's own reading

Under the chart the note says the loss was low before 1840, then larger and episodic, and that "the 20th century was fastest (1900–2000 ≈ 19.2 nT/yr), 2000–25 slower (10.8) with a recent uptick" [2 Figure 5]. Our runs give the same era averages, 19.24 and 10.78 nT a year (our analysis) [10].

How fast the axial dipole has weakened, 1840–2030

OUR ANALYSIS



Nanotesla a year of the axial dipole lost (above zero) or gained (below)

Our analysis of COV-OBS.x2 (CC BY 4.0) [14], CHAOS-8.7 (CC BY 4.0) [13] and IGRF-14 [10]: the change in $|g_1^0|$, the axial dipole, from the models' splines and IGRF-14's five-year epochs. Not the note's figure, which we don't reproduce. Hover or tap a mark for its value.

PEAK, 1915–20
OUR ANALYSIS
30.4 nT
A year, IGRF-14's fastest five years; COV-OBS.x2's ten-year mean peaks at 26.7 around 1918 [10] [14].

PEAK, 1970–75
OUR ANALYSIS
24.0 nT
A year; COV-OBS.x2 gives 23.1 around 1969 [10] [14].

NOW
OUR ANALYSIS
12.7 nT
A year in 2025 in CHAOS-8.7, up from 6.5 over 2018–19; IGRF-14 forecast 12.6 for 2025–30 [13] [10].

OUR ANALYSIS

"Another accelerative rise", and "what if it's even bigger?"

A rise is under way: the rate fell to 7.61 nT a year in 2015–20, IGRF-14's lowest five years since 1900, and from CHAOS-8.7's low, 6.5 nT a year over 2018–19, it has roughly doubled [10] [13]. That is the uptick the note describes. It is about as large as forecast, and it is 41–53% of the two earlier peaks; to be "even bigger" it would have to pass 24–30 nT a year [10] [14]. Nor are the swings "getting wonky": they were largest early in the 20th century. Over the long run the dipole has lost about 5% a century, as our check of the presenter's field-loss figures found, where the same claim, "The field loss is accelerating", is rated Misleading.

OUR ANALYSIS

"That little blip": Context

"Now look at the right side of the chart. Do you see that little blip there? That's the best scientist in the world's best guess made about 23 months ago." [1 00:02:46–00:02:54] On the note's chart the right-hand mark is IGRF-14's forecast for 2025–30, a short dash at the forecast rate, 12.6 nT a year [2 Figure 5] [10], so it is very likely what was meant. It is the work of many: IGRF-14 was "finalized in November 2024 by a task force of IAGA Working Group V-MOD" [11 §1] [12], from 18 forecasts sent in by 19 teams from 27 institutes [11 §3], and "about 23 months ago" fits. It has held up: CHAOS-8.7 has the axial dipole falling 12.7 nT in 2025, against 12.6 forecast; the World Magnetic Model's forecast is 12.0 [13] [16]. What "That data point we were just looking at is now over there" [1 00:02:54–00:02:58] showed, we can't tell.

9 · "100× AT THE END"

The only hundredfold figure we found is about rare, local turns in the field's direction, in simulations

"Peer-reviewed science on the final acceleration suggests changes accelerate by 100x at the end." [1 00:03:02–00:03:06] The report names no paper, and "final acceleration" appears in none we read.

What Davies and Constable (2020) found

Comparing 16 geodynamo simulations with a model of the field over the last 100,000 years, they found that "maximum rates of directional change reach ~10° yr⁻¹", typically during times of decreasing field strength, almost 100 times faster than current changes" [28 Abstract]; today's comparable rate is about 0.1° a year [28 Introduction]. They describe the spikes as "local or regional rapid accelerations in magnetic field changes", "not necessarily associated with" large swings of the dipole's axis [28 Results], and stress that "such events are exceedingly rare": one interval above 2° a year in over 5 million samples of the last 100,000 years, with 95% of samples below 0.05° a year [28 Discussion].

The fastest changes ever claimed, and none is a hundredfold "final acceleration"

Scroll sideways to see the whole table →

WHERE AND WHEN	WHAT WAS CLAIMED	WHERE IT STANDS
Computer models of the geodynamo	Turns of up to about 10° a year, "almost 100 times faster than current changes" [28 Abstract]	Simulations, matched in amplitude by a model of the last 100,000 years; about direction at one place, not strength
Steens Mountain, Oregon, a reversal in lava flows	Extremely rapid turns, about 6° a day, inside one lava flow	Its authors' later sampling weighs against it, though the alternative, reheating, also has problems [29 Abstract]
Sheep Creek Range, Nevada, 15.6 million years ago	A 53° turn at about 1° a week, read from a reheated lava flow	Its authors say it "reinforces the controversial hypothesis" of much faster change during reversals [30]
Sulmona Basin, Italy, the last reversal	A flip in less than a century [31]	Disputed: a re-appraisal finds the section may not record the field reliably [32 Abstract]; the original authors have replied [38]
The last reversal, 773,000 years ago, worldwide	A process of at least 22,000 years whose final flip came "rapidly — in less than 4000 years" [33 Discussion]	The nearest thing to a fast end, and still millennia, not decades

After the table in our guide to the field, which reads the same sources; and our check of a 2026 study of excursion and reversal rates, where even the fastest dipole collapse, the Laschamp excursion's, took about 1,500–1,900 years.

OUR ANALYSIS

Why this is Overstated

The hundredfold figure is real, and Davies and Constable call the spikes accelerations, so their abstract is very likely the report's source; that identification is ours. But their factor compares the fastest simulated turns of the field's direction at one place with today's turns. It isn't a forecast, it isn't about the field's strength, and it is no final phase of a decline: in most simulations the fastest turns come more than 5,000 years from any reversal [28 Results]. That is some basis, with much more claimed. Applied to the dipole's strength instead, a hundred times the forecast 12.6 nT a year would be about 1,260 nT a year and would halve the axial dipole in about 12 years; no model or forecast shows anything near that [10] [13].

10 · WHAT THE REPORT GETS RIGHT

Its starting point holds up: about 10% lost since the mid-1800s, about 5% a century

"It was widely reported in the late 90s that Earth had lost about 10% of magnetic field protection compared to what Earth enjoyed in the middle of the 1800s. For the last 200 years, we've lost about 5% of the field each century." [1 00:00:28–00:00:42] Both figures hold up against the measurements.

FROM 1850 TO 1998
OUR ANALYSIS
−8.1%
The dipole moment in COV-OBS.x2; −8.2% from 1840. The axial dipole lost 7.8–8.0% [14] [15] [10]. "About 10%" is close.

FROM 1840 TO 2025, PER CENTURY
OUR ANALYSIS
5.1%
The dipole moment's loss per century; the axial dipole's, 4.8% [14] [10].

FROM 1826 TO 2026, PER CENTURY
OUR ANALYSIS
4.5–5.1%
The axial dipole 4.5% with the 2006 paper's trend before 1840 and 4.8% with gufm1's; the dipole moment 5.1% with gufm1's [15] [25] [10].

OUR ANALYSIS

Where the report is right, and fair to its sources

The field is weakening, as our guide rates True, and about 5% a century is the measured pace since 1840. The report's 10% since the middle of the 1800s matches the measurements better than the 1998 caption it cites. The recent pickup in the dipole's loss is real. ESA did write 15% and "on the verge of reversing polarity", called the field "overdue for a reversal" and put the pole at "around 65 km a year" [4 ¶5] [4 ¶9] [4 ¶7]. *Live Science* did publish "5 percent per decade", and paraphrased the mission manager on a field "weakening faster now", an easy source for the "team leader" slip [5 ¶5] [5 ¶6]. The 2006 paper the report links opens with the report's own figure, a decay of "about 5% per century since measurements began in 1840" [25 Abstract]. NOAA's official yearly pole positions show the same steps, 5 of IGRF-14's 6 jumps (our analysis) [17]. And the note behind the report states its assumption before 1840, gives an alternative, checks its poles against NOAA and the surveys, and warns that IGRF's yearly pole speed is step-shaped [2 Methods]. The trouble starts where the report turns these into a race: 15% by 2010, ten times faster, jumps growing toward a pole shift.

11 · WHAT TO WATCH

Evidence promised "this week", and a Part 2

"And this week later, our Grockbot team will release evidence that this final acceleration is beginning." [1 00:03:06–00:03:14] "Later this week, we're going to show you the speed dial is surging upward." [1 00:03:43–00:03:46] Neither had appeared when we checked, and we don't rate promises.

Update, November 11, 2026: Part 2 appeared on November 11, with two research notes and a paper. None measures the strength of Earth's core field: one note counts Florida's aurora records, the other reviews one storm, and the paper computes the solar wind's input. The field's loss sped up from 2019–2020 and levelled off within months of March 2023: from March 23, 2023 to August 31, 2026 the axial dipole weakened 12.3 nT a year in CHAOS-8.7, against the 12.6 the IGRF-14 forecast [13] [10]. Our review of Part 2 rates its claims, and our checks of note 004, note 006 and the paper have the details.

OUR ANALYSIS

What the numbers say now

For comparison when it comes: the axial dipole is falling 12.1–12.8 nT a year in CHAOS-8.7 for 2025–26, about as IGRF-14 forecast; the dipole moment is falling 5.1–5.4% a century, close to its 1840–2025 average of 5.1% [13] [10] [14]. The north dip pole is slowing, at about 35 km a year in 2025–26 [13]. A "speed dial surging upward" would have to move one of these well beyond its forecast.

What would change these verdicts

01
A field model or agency showing the dipole losing several percent a decade, or a continuous model showing the pole's speed jumping.

02
A published forecast from a geomagnetic model putting an excursion within decades, rather than the centuries the specialists expect.

03
A paper showing a hundredfold acceleration at the end of a field's decline, as the report describes, or the report's own source for "100x", if it isn't the one we found.

These are our own judgments of what would change the verdicts, not forecasts from the sources.

12 · LIMITS

What this check could and couldn't settle

A transcript, not the video

We read the report's automatic transcript and didn't see its graphics. Two match charts in the note by description; what "this" and "over there" showed, we can't say [1].

An unnamed source

The report names no paper for "100x". Davies and Constable (2020) is very likely the source, the only peer-reviewed "almost 100 times" we found [28]; that identification is ours, and another source would need its own check.

ESA's page before 2014

Its 2013 version, "Understanding Earth's protective shield", archived in November 2013 and April 2014, has no 15%; the sentence came with a rewrite in 2014, sometime between April 24 and September 12, which no archived copy narrows down [4]. The 2012 brochure already had it [8 p. 4].

Models of the measurements

IGRF-14, COV-OBS.x2, CHAOS-8.7 and gufm1 are fitted to observatory, survey and satellite data, not raw readings. COV-OBS.x2's early decades rest on few observations, IGRF before 1945 isn't definitive, and CHAOS-8.7's satellite data end on August 31, 2026, its observatory data on February 15, 2026 [14] [10] [13]. COV-OBS.x2 and CHAOS-8.7 are smoothed in time, so they would soften a sudden change; the surveys bracket the 1990s rise but are years apart [18 Table 6].

Abstracts, titles and records

We read these only as an abstract, a title or a record: Jackson and colleagues (2000), Livermore and colleagues (2020), Brown and colleagues (2018), Gubbins and colleagues (2006), Suttie and colleagues (2011), Poletti and colleagues (2018), Camps and colleagues (1999), Bogue and Glen (2010), Buffett and colleagues (2019) and the 2019 Sulmona comment [15] [20] [23] [25] [26] [27] [29] [30] [34] [38]. Our checks of the note and of the 2006 paper read Newitt and colleagues (2009), Finlay (2008) and the paper itself in full [18] [37].

13 · HOW WE WORKED IT OUT

One script, the public field models, and every number tagged "Our analysis"

Every number of ours on this page comes from one standard-library Python script. It downloads six public files, checks each against the SHA-256 of the copy we used, and writes its results to a JSON file.

STEP 1

Rules first

Before running each of our tests we wrote down what it would compute and what result would count for or against each claim, in four rules files, and logged their checksums.

STEP 2

Check the code

The script reproduces NOAA's 12 test values for the World Magnetic Model within 0.05 nT [16], the dipole numbers on our check of the field-loss figures, and gufm1's 1840 value in the note [2 Figure 5].

STEP 3

Run the models

IGRF-14, COV-OBS.x2, CHAOS-8.7 and gufm1, for the articles' spans, the pole and the dipole's rate [10] [14] [13] [15]; NOAA's pole positions as a check, matched within 2.2 km over 1900–2018 [17].

STEP 4

Changes, logged

A sign error in an early run, fixed before use; the pole run again with the conventions of our check of the note, which moved the peak speeds by about 1.5 km a year and changed no test's outcome; two measures added from that check, where they were registered; and, after review, the unsquared share and the largest rises.

Code and numbers

PY **special_report_numbers.py**
Every number tagged "Our analysis": the three articles and the report's timeline, the pole, the dipole's rate, the field before 1840, and the two charts · 44 KB

JSON **s0-news-2026-11-09-numbers.json**
Its output, as on this page · 38 KB

TXT **RULES_articles.txt · RULES_pole.txt · RULES_rates.txt · RULES_direction.txt**
The rules, as written before the runs · 6 KB, 4 KB, 3 KB and 2 KB

TXT **HASHES.txt**
SHA-256 of the rules, the script, its output and its six inputs, and the changes made after the rules were written · 4 KB

Run it

It needs only Python 3. Put it in an empty folder and run `python3 -I -B special_report_numbers.py`. The first time it downloads its six inputs, about 1.9 MB: IGRF-14, NOAA's pole positions and the World Magnetic Model from NOAA [10] [17] [16], COV-OBS.x2 and CHAOS-8.7 from DTU Space, both CC BY 4.0 [14] [13], and gufm1 from the University of Colorado [15]. It takes under a minute.

Related checks

FALSE 15% gone, ten times faster? The Disaster Cycle, Fact-Checked
FALSE The 2025 model already failing? The Disaster Cycle, Fact-Checked
UNSUPPORTED A magnetic pole flip in the 2040s? The Disaster Cycle, Fact-Checked
FALSE 55% of the field gone? The Disaster Cycle, Fact-Checked

Sources

Bracketed numbers refer to this list. For the report [1], times are positions in the video (hours:minutes:seconds), from the first to the last line of tactiq.io's automatic transcript that holds the words quoted. For S0 News's research note [2], which has no page numbers, locators are its own section and figure names: Claims, Methods, Figure 3 and Figure 5. For web articles, ¶ counts the article's paragraphs, captions not counted; for <i>Scientific American</i> [3], ¶1 is the line naming the author and "caption 1" the first image caption. For papers, p. gives a page, § a section, and Abstract, Introduction, Results, Discussion or Table the part we read. We read the sources on November 9, 2026, except those marked as read for earlier pages. Links checked November 9, 2026.

1 SpaceWeatherNews (S0) (November 9, 2026). SPECIAL REPORT: Pole Shift - Part 1. YouTube video, https://www.youtube.com/watch?v=m450pdDkgsk, published 11:02:48 UTC, with its description as given in the channel's public feed on November 9, 2026. Quoted from tactiq.io's automatic transcript, supplied by the site's owner; times are positions in the video. We did not see the video's graphics.

2 S0 News (undated). Since 1800 the South Atlantic Anomaly has deepened by 7,100 nT and grown almost sixfold, and the north magnetic pole has sped up tenfold. Space Weather News research note from "internal GrokBot Team 007", a Google Doc, read in full on November 9, 2026. No licence is stated, so it is linked, not hosted, and none of its figures is redrawn. Checked on our check of the note.

3 Brill, R. C. (1998, October 5). Is it true that the strength of the Earth's magnetic field is decreasing? What's the effect? *Scientific American*, Ask the Experts; the page was last modified February 20, 2024. Read in full on November 9, 2026; all rights reserved, so quoted briefly.

4 European Space Agency (dated October 23, 2013). Our protective shield. Web page, read in full on November 9, 2026. It was first published in 2013 as "Understanding Earth's protective shield", without the 15%: we read the Internet Archive's copies of November 1, 2013 and April 24, 2014; the results; the old address redirected to today's page by August 13, 2014, and the archive's copy of September 12, 2014 has today's text.

5 Dickerson, K. (2014, July 8). Earth's Magnetic Field Is Weakening 10 Times Faster Now. *Live Science*. Read in full on November 9, 2026.

6 European Space Agency (2014, June 19). Swarm reveals Earth's changing magnetism. News release, read in full; its list of related articles dates ESA's launch story, "ESA's Swarm trio on its way to watch over our planet's magnetic shield", November 22, 2013.

7 European Space Agency (2020, May 20). Swarm probes weakening of Earth's magnetic field. News release, read in full.

8 Haagmans, R., Bock, R., and Rider, H. (2013). Swarm: ESA's magnetic field mission. ESA BR-302, 2nd edition, September 2013; the 1st edition, of October 2012, has the same text on the page we read. As read for our check of the presenter's field-loss figures.

9 Phillips, T. (2003, December 29). Earth's inconstant magnetic field. Science@NASA, in the Internet Archive's copy of January 9, 2004. US government work. As read for our check of the presenter's field-loss figures.

10 IAGA Working Group V-MOD (2024). International Geomagnetic Reference Field, 14th generation (IGRF-14): Gauss coefficients 1900–2025 and secular variation 2025–2030. Data file, NOAA National Centers for Environmental Information; retrieved November 9, 2026, the same file, by its SHA-256, as on our earlier pages. The numbers from it are ours.

11 Beggan, C. D., Kloss, C., Amblard, P., et al. (2026). International geomagnetic reference field: the fourteenth generation. *Earth, Planets and Space* 78, 127. CC BY 4.0. Full text read on November 9, 2026.

12 NOAA National Centers for Environmental Information. International Geomagnetic Reference Field. Web page, read November 9, 2026.

13 Kloss, C., Finlay, C. C., Olsen, N., Tøffner-Clausen, L., Gillet, N., and Grayver, A. (2026). The CHAOS-8 geomagnetic field model. *Earth, Planets and Space* 78, 21. CC BY 4.0. With the model file of CHAOS-8.7, released September 30, 2026, with Swarm data to August 31, 2026, from DTU Space's CHAOS-8 website (doi:10.5281/zenodo.22959079), CC BY 4.0, still the latest release on November 9, 2026.

14 Huder, L., Gillet, N., Finlay, C. C., Hammer, M. D., and Tchoungui, H. (2020). COV-OBS.x2: 180 years of geomagnetic field evolution from ground-based and satellite observations. *Earth, Planets and Space* 72, 160. CC BY 4.0. With the model file COV-OBS.x2-int, 1840–2020, from DTU Space.

15 Jackson, A., Jonkers, A. R. T., and Walker, M. R. (2000). Four centuries of geomagnetic secular variation from historical records. *Philosophical Transactions of the Royal Society A* 358, 957–990. Record only; we used its model, gufm1, 1590–1990, from the file gufm1.txt.

16 NOAA National Centers for Environmental Information and British Geological Survey (2024). World Magnetic Model 2025: coefficients and test values (WMM2025COF.zip). Data file.

17 NOAA National Centers for Environmental Information. Wandering of the geomagnetic poles, with its yearly north dip pole positions, 1590–2025 (NP.xy).

18 Newitt, L. R., Chulliat, A., and Orgeval, J.-J. (2009). Location of the North Magnetic Pole in April 2007. *Earth, Planets and Space* 61, 703–710. As read for our check of the note.

19 NOAA National Centers for Environmental Information and British Geological Survey (2025). State of the Geomagnetic Field, December 2025. As read for our review of the October 20 episode; p. gives a page of the PDF.

20 Livermore, P. W., Finlay, C. C., and Bayliff, M. (2020). Recent north magnetic pole acceleration towards Siberia caused by flux lobe elongation. *Nature Geoscience* 13(5), 387–391. Abstract only, as read for our check of the note.

21 Korte, M., Brown, M. C., Panovska, S., and Wardinski, I. (2019). Robust characteristics of the Laschamp and Mono Lake geomagnetic excursions: results from global field models. *Frontiers in Earth Science* 7, 86. CC BY 4.0. As read for our guide.

22 Shinu, S., Mahgoub, A. N., and Korte, M. (2026). Rates of geomagnetic field change during excursions and reversals. *Journal of Geophysical Research: Solid Earth* 131(10), e2025JB033422. CC BY 4.0. As read for our check of the paper.

23 Brown, M., Korte, M., Holme, R., Wardinski, I., and Gunnarson, S. (2018). Earth's magnetic field is probably not reversing. *Proceedings of the National Academy of Sciences* 115(20), 5111–5116. The title and the Significance statement, as deposited with Crossref and read for our earlier pages.

24 Laj, C., and Kissel, C. (2015). An impending geomagnetic transition? Hints from the past. *Frontiers in Earth Science* 3, 61. Original research article, CC BY 4.0. Read in full on November 9, 2026.

25 Gubbins, D., Jones, A. L., and Finlay, C. C. (2006). Fall in Earth's magnetic field is erratic. *Science* 312(5775), 900–902. We read the abstract, as deposited with Crossref; our check of the paper read it in full, from a copy its co-author posted.

26 Suttie, N., Holme, R., Hill, M. J., and Shaw, J. (2011). Consistent treatment of errors in archaeointensity implies rapid decay of the dipole prior to 1840. *Earth and Planetary Science Letters* 304, 13–21. Title only, from Crossref.

27 Poletti, W., Biggin, A. J., Trindade, R. I. F., Hartmann, G. A., and Terra-Nova, F. (2018). Continuous millennial decrease of the Earth's magnetic axial dipole. *Physics of the Earth and Planetary Interiors* 274, 72–86. Title only, from Crossref.

28 Davies, C. J., and Constable, C. G. (2020). Rapid geomagnetic changes inferred from Earth observations and numerical simulations. *Nature Communications* 11, 3371. CC BY 4.0. Full text read on November 9, 2026.

29 Camps, P., Coe, R. S., and Prévot, M. (1999). Transitional geomagnetic impulse hypothesis: geomagnetic fact or rock-magnetic artifact? *Journal of Geophysical Research: Solid Earth* 104(B8), 17747–17758. Abstract only, as read for our guide.

30 Bogue, S. W., and Glen, J. M. G. (2010). Very rapid geomagnetic field change recorded by the partial remagnetization of a lava flow. *Geophysical Research Letters* 37(21). Abstract only, as deposited with Crossref.

31 Sagnotti, L., Giaccio, B., Liddicoat, J., Nomade, S., Renne, P., Scardia, G., and Sprain, C. (2016). How fast was the last geomagnetic reversal? Experimental constraints from the Sulmona lacustrine sequence (central Apennines, Italy). EGU General Assembly 2016, EGU2016-3851. Conference abstract, CC BY 3.0, summarizing the authors' papers in *Geophysical Journal International* 199, 1110–1124 (2014) and 204, 798–812 (2016). As read for our guide.

32 Evans, M. E., and Muxworthy, A. R. (2018). A re-appraisal of the proposed rapid Matuyama–Brunhes geomagnetic reversal in the Sulmona Basin, Italy. *Geophysical Journal International* 213(3), 1744–1750. The authors' abstract, as read for our guide.

33 Singer, B. S., Jicha, B. R., Mochizuki, N., and Coe, R. S. (2019). Synchronizing volcanic, sedimentary, and ice core records of Earth's last magnetic polarity reversal. *Science Advances* 5(8), eaaw4621. CC BY-NC 4.0: quoted, not adapted. As read for our guide.

34 Buffett, B., Davis, W., and Avery, M. S. (2019). Variability of millennial-scale trends in the geomagnetic axial dipole. *Geophysical Research Letters* 46(24), 14450–14458. Abstract only, as deposited with Crossref.

35 SpaceWeatherNews (S0) (July 7, 2026). Pole Shift Acceleration in the 2030s. YouTube video, an excerpt from a livestream, quoted at 00:08:00–00:08:03 from its automatically generated captions as on our check of the presenter's field-loss figures.

36 NASA Earth Observatory (2014, September 7). Measuring Earth's magnetism. Image of the Day, caption by M. Carlowicz. US government work. As read for our check of the presenter's field-loss figures.

37 Finlay, C. C. (2008). Historical variation of the geomagnetic axial dipole. *Physics of the Earth and Planetary Interiors* 170(1–2), 1–14. As read for our check of Gubbins, Jones and Finlay (2006), from a copy its author posted.

38 Sagnotti, L., Giaccio, B., Liddicoat, J., Caricchi, C., Nomade, S., and Renne, P. (2019). On the reliability of the Matuyama–Brunhes record in the Sulmona Basin — Comment to 'A reappraisal of the proposed rapid Matuyama–Brunhes geomagnetic reversal in the Sulmona Basin, Italy' by Evans and Muxworthy (2018). *Geophysical Journal International* 216(1), 296–301. Title and record only, as read for our guide.

METHOD

How this was checked

On November 9, 2026, we checked every statement, number and quotation on this page against its source: S0's special report, through tactiq.io's automatic transcript, quoted verbatim with its timestamps, and its description's five links [1]; the three popular articles it links, read in full, with ESA's own releases of 2014 and 2020 and the Internet Archive's copies of ESA's page from November 2013 to September 2014 [3] [4] [5] [6] [7]; S0 News's research note 007, for the two charts the report describes [2]; four field models, IGRF-14, COV-OBS.x2, CHAOS-8.7 and gufm1, with NOAA's pole positions and the World Magnetic Model as checks [10] [13] [14] [15] [16] [17]; the IGRF-14 paper [11]; and, for "100x", Davies and Constable (2020) in full and five other studies of rapid change [28]. In all, 38 sources. The note and the 2006 paper are checked on their own pages, and their verdicts appear here on cards.

The verdicts and the items tagged "Our analysis" are our own assessment, built on the cited sources: the losses over each article's span, the share of Earth's surface that weakened, the pole's yearly speed and where its changes fall, the dipole's rate of loss and the forecast against CHAOS-8.7, the field's direction before 1840, and what a pole shift within 5–10 years would take. Three verdicts restate the site's earlier checks: "An excursion is under way now", "15% gone, ten times faster" and "The field loss is accelerating". The verdict on the field before 1840 follows our check of the 2006 paper, and the pole's numbers match our check of the note.

Every number from our own analysis comes from special_report_numbers.py, which downloads its six inputs, checks them against the SHA-256 of the copies we used, reproduces NOAA's 12 test values for the World Magnetic Model within 0.05 nT, and reproduces the dipole numbers of our check of the presenter's field-loss figures and the pole speeds of our check of the note. Its tests were registered in four rules files before they ran; the changes since are logged in HASHES.txt. Not verified: the report's graphics, which we didn't see; the source of its "100x", which it doesn't name, so identifying it is ours; and the full texts of the papers we read only as an abstract, a title or a record: Jackson and colleagues (2000), Livermore and colleagues (2020), Brown and colleagues (2018), Gubbins and colleagues (2006), Suttie and colleagues (2011), Poletti and colleagues (2018), Camps and colleagues (1999), Bogue and Glen (2010), Buffett and colleagues (2019) and the 2019 Sulmona comment [15] [20] [23] [25] [26] [27] [29] [30] [34] [38].

After the page was built, a fresh reviewer who hadn't seen the drafting re-ran the hosted script, which reproduced its numbers file byte for byte, recomputed every number tagged "Our analysis" in separate code, and checked every quotation, locator and source. The changes that followed: the Internet Archive holds ESA's page as first published in 2013, and it had no 15% until a rewrite in 2014; the verdict on "100× acceleration at the end" moved from Misread to Overstated, because identifying its source is ours and the paper ties its fastest changes to excursions; the top figure now counts IGRF-14's jumps rather than giving a squared share; the panel quotes the same words as our check of the note; and about 25 smaller fixes of wording, figures and locators.

This page was researched and written with Claude, an AI assistant made by Anthropic, and then re-checked against its sources in a separate verification pass.

The verdicts on this page

FALSE	The evidence contradicts the claim.
MISLEADING	Contains something true but leaves a false impression, usually by leaving out key context.
OVERSTATED	Has some basis but claims much more than the evidence supports.

All ten verdicts, and how we check

CORRECTIONS

Corrections and changes

If we get something wrong, we fix it and record the change below with the date. If a correction changes a verdict, the log says what the old verdict was.

Change log

Nov 11, 2026	Updated: Part 2 of the report appeared on November 11. Section 11, which had left the promised evidence unrated, now says what Part 2 offered and what the field has done since March 2023, and links our checks of it. No verdict changed.
Nov 9, 2026	Published on factchecked.science after a full check against the sources. Built from S0's special report of November 9, 2026, through its automatic transcript; the three articles it links and ESA's releases of 2014 and 2020; S0 News's research note 007; the IGRF-14, COV-OBS.x2, CHAOS-8.7 and gufm1 field models; and Davies and Constable (2020), read on November 9, 2026.

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