

GLENDALE APP

PRESENTED BY KRIS KNUTSON MARCH 21, 2026
- AT THE MICHIGAN AURORA CHASERS 4TH ANNUAL WORKSHOP

APP WAS DEVELOPED BY ANDY STABLES IN SCOTLAND AND IS DESCRIBED AS

“THE ONLY ACCURATE AURORA APP”

- *APP USES SCIENTIFIC RESEARCH AND MODELS THAT ARE NOT AVAILABLE ELSEWHERE*
- *THE APP RECENTLY CELEBRATED ITS 10 YEAR ANNIVERSARY!*
- *AND THE APP IS **FREE** AND SAFE TO USE!*

GLENDALE AND ME!

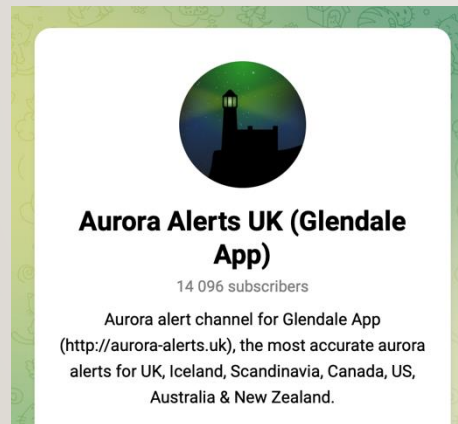
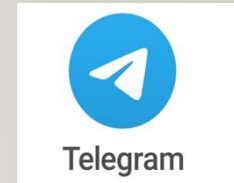
- I've been following the Glendale App for over 3 years
- During that time I watched the app and photos I was seeing posted in Michigan Aurora Chasers. This helped give me an idea of what was happening in the field compared to what the app was showing.
- I have consistently caught the lights in my area - Berrien County in SWMI at 41.95°N – because of the Glendale App.
- I will highlight the panels I use most in this app.
- There's so much more in the app – check out the User Guide, FAQs (and don't miss the Advanced FAQs if you want a deeper dive into the app)

GLENDALE *IS* AN APP – BUT NOT IN AN APP STORE (IT IS A WEB-BASED APP)

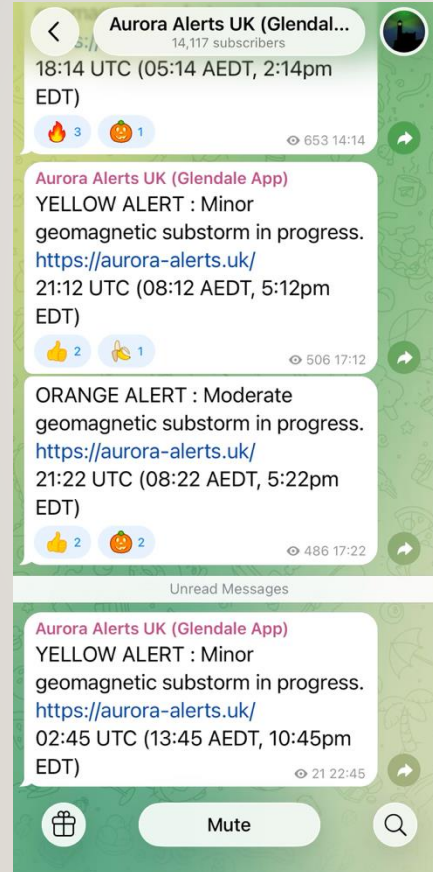
- Go to: www.aurora-alerts.uk
- Create your free account with your e-mail address
- Get your registration code
- Enter your registration code
- Add the App to your Home Screen (can be used on phones, tablets, computers)
- Android users can sign up for alerts through the app
- iPhone users, sign up for the Aurora Alert Channel through the **Telegram** messaging app
 - Android users can also sign up for the Telegram alerts as a back-up
- NOTE: iPhone users may, from time-to-time, see a pop-up message in the App, asking you to update. Simply click to update.

GLENDALE AURORA ALERTS THROUGH TELEGRAM APP

- Download the Telegram App - from the appropriate App Store
- Sign up for the Aurora Alert Channel through the **Telegram** messaging app
 - <https://t.me/GlendaleApp>



GLENDALE AURORA ALERTS THROUGH TELEGRAM APP



Beware of the Mute button!

I tend to close windows by swiping up on my iPhone from the middle at the bottom.

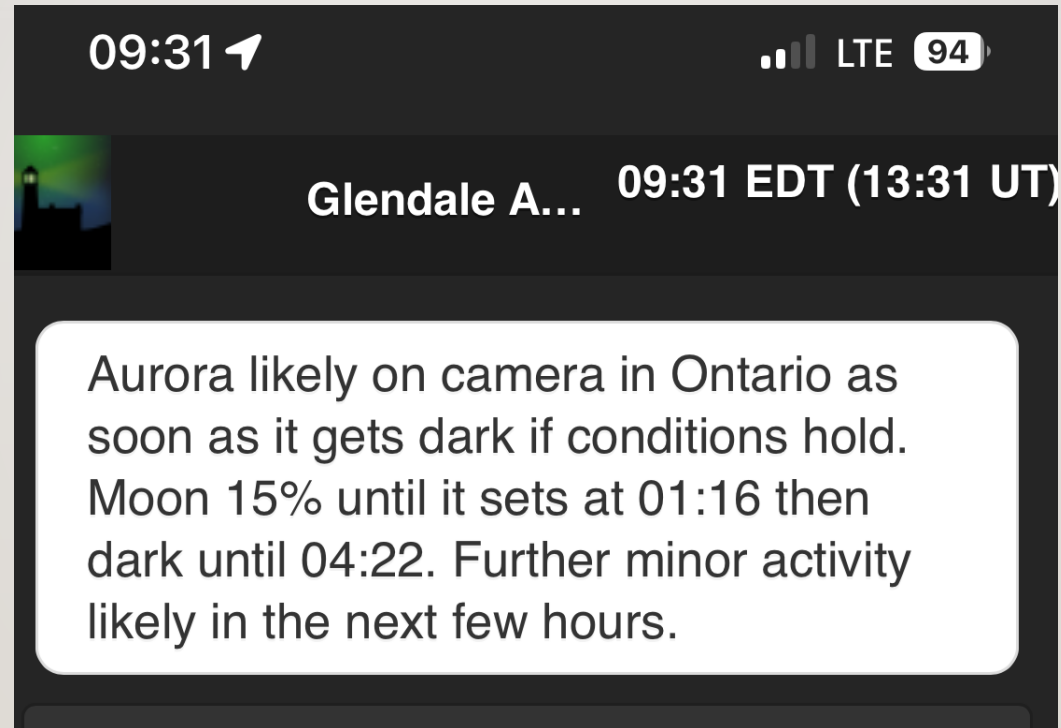
I have “muted” Glendale alerts more times than I can count!

WHERE TO START? – AT THE TOP WITH **THE “NOWCAST”**

- Top of the page has easy to understand description of what aurora is doing right now! ‘The “NOWCAST” is a plain English summary of what the ... numbers are telling us right now.’
- Example: ”Aurora likely on camera in northern US states as soon as it gets dark if conditions hold. Moon 18% until it sets at 01:16 then dark until 04:22.”
- If there is an active ALERT, you’ll find it just below the written text. It will be colour-coded, for example “**ORANGE ALERT: Moderate geomagnetic substorm in progress**”
- The User Guide says to: ‘Substitute **substorm** for **aurora**. **Substorm = Aurora**’

(Items in single quotation marks are taken from Glendale User Guide)

NOWCAST EXAMPLE



JUST STARTING? STICK WITH **THE “NOWCAST”**

- As a newbie to the Glendale app, it is totally fine to stick with the text at the top of the page – The Nowcast – which tells what the aurora is doing right now, at your location!
 - In fact, Andy Stables, developer of the app, recommends this!
- The Nowcast will often tell when the moon will rise and set
- The Nowcast will show when the substorm (aka Aurora) is expected to peak.
 - Tip: Be outside and ready before the peak

EXAMPLE OF THE NOWCAST

This shows more details about viewing and especially the peak.

In SW Michigan I have found that the peak times have been very accurate – I try to be out looking 10-15 minutes before the peak time,

Glendale A... 21:42 EST (02:42 UT)

Aurora possible in Canada and into the US border at the moment for those in dark sky areas. It will be low to the north. Moon 48% until it sets at 23:20 then dark until 06:07. The next period of activity should start at around 20:50 EST with the peak around 21:50 EST.
* Weather permitting in dark-sky areas.

⤴ Tonight: Nov 27th/28th

- 21:05 ORANGE ALERT : Moderate geomagnetic substorm in progress. 39 minutes
- 18:05 ORANGE ALERT : Moderate geomagnetic substorm in progress. 3 hours
- 17:36 YELLOW ALERT : Minor geomagnetic substorm in progress. 4 hours
- 08:52 ORANGE ALERT : Moderate geomagnetic substorm in progress. 12 hours

March 13, 2026

I was able to catch the lights because I was watching the Glendale App.

At home - Berrien County at 41.95°N .

-969 nT



THE MOST IMPORTANT NUMBER

- Next in the app is LIVE REPORTS map which shows member reported aurora sightings (green check marks) or cloudy conditions shown by a black cloud!
- Directly under the map you will see a number in a colour-coded text box, along with an arrow in the square textbox to the right of the, usually, negative number (- # nT).
- This number shows the strength of the aurora at the moment. The larger the negative number the better it is, especially for those of us at mid-latitudes.
- Arrow “falling” is best. And the steeper the downward trend the better. These are typically the times that Patrick Grubba is sending us GET OUT NOW alerts!
- Substorms go through phases: Growth; Expansion; Recovery (more about these later)

ALERT COLOURS & LEVELS:

MONITOR YOUR AREA AND NOTE WHICH LEVEL YOU NEED TO SEE AURORA
- USUALLY -800 FOR ME, BUT I HAVE CAUGHT THE LIGHTS AT -600 TO -700

- **Yellow – Minor**
 - GOOD (according to Hendrik Zwart's book - "Aurora – Prepare, Predict, Photograph")
- **Orange – Moderate**
 - GREAT
- **Red – Strong**
 - FABULOUS
- **Purple – Major/Severe/Extreme**
 - AMAZING

ALERT COLOURS & LEVELS – COLOURS ARE CONSISTENT THROUGH THE APP (IMAGE IS FROM GLENDALE USER GUIDE)

MONITOR YOUR AURORA SIGHTINGS COMPARED TO THE GLENDALE ALERT LEVELS – THIS WILL GIVE YOU A PLAN FOR FUTURE AURORA

Alert Levels	
ONSET	Applicable to Northern Scotland, Iceland and Northern Scandinavia.
Yellow -200nT	YELLOW Applicable to Northern Scotland, Iceland and Southern Scandinavia upwards. Tasmania & New Zealand.
Orange -400nT	ORANGE Applicable down to Southern Scotland, Northern England, Northern Ireland, Denmark and Lithuania upwards, Victoria.
Red -800nt I need RED in SWMI	RED Applicable to the whole UK and Ireland, Netherlands, Germany, Poland, southern Canada upwards. Australia up to Melbourne.
-1200nt	MAJOR SEVERE EXTREME Additional levels indicating exceptionally strong auroras. Do not miss these.

THE MOST IMPORTANT NUMBER EXAMPLE:

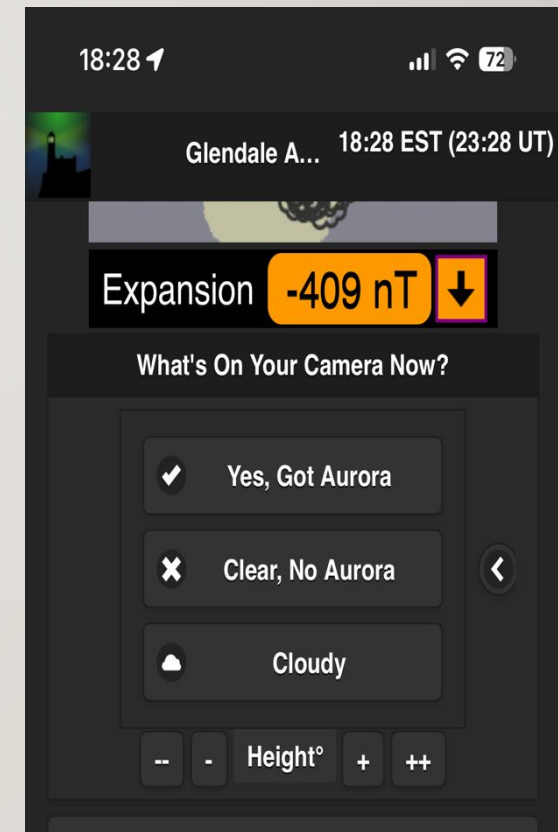
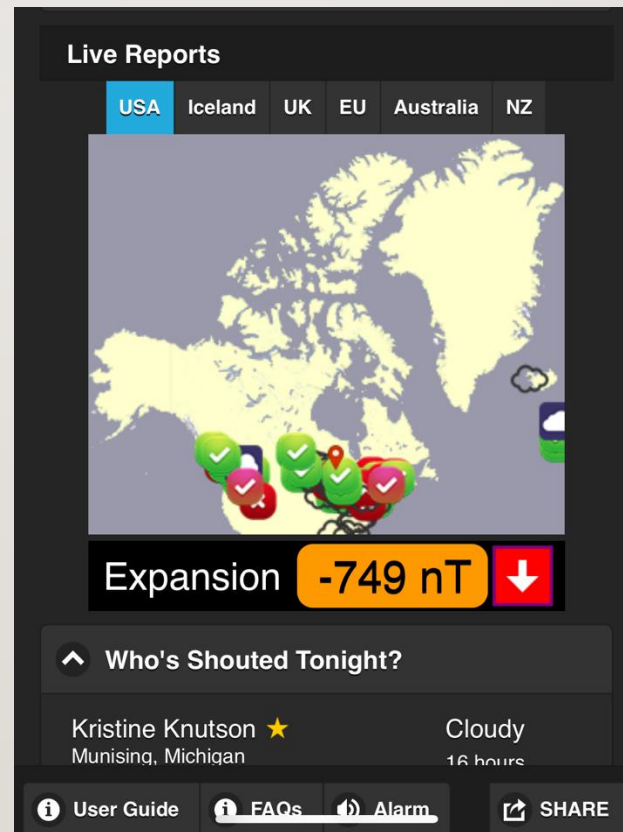
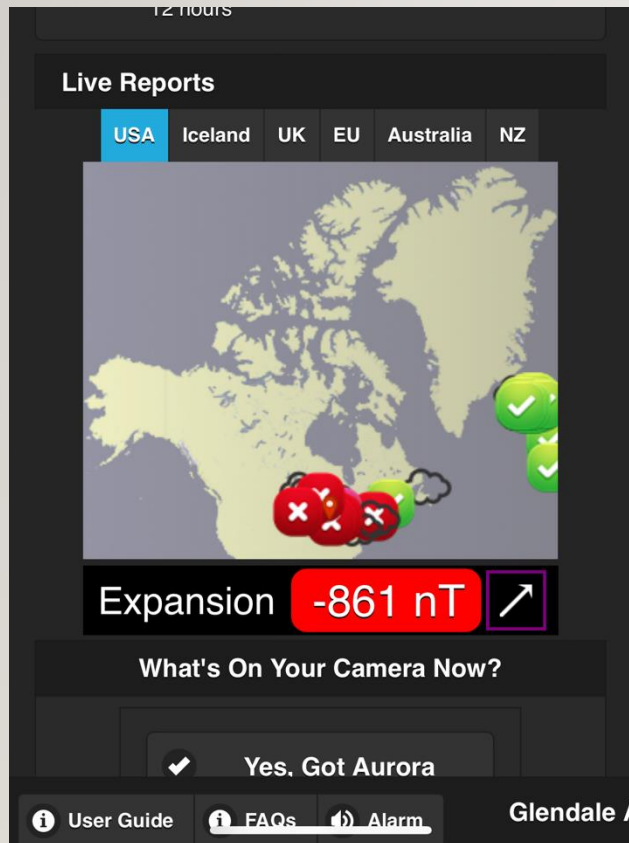
SHOWS THE SUBSTORM PHASE (EXPANSION) AND STRENGTH (-523)

Note the
ORANGE box –
more about the
Box and Arrow
next



THE MOST IMPORTANT NUMBER EXAMPLES:

NOTE THE COLOURS AND THE ARROWS ↗ ↓



ARROWS, DIRECTION, AND BOX FRAME

- Arrows dropping is good, aurora is building. The steeper the downward arrow, the better. The boxes and arrows hold key information for us.
- A box with an open frame, not one of our 4 alert colours, indicates the data is from fewer magnetometers
- Magnetometers are devices, on earth, that measure the strength and direction of the Earth's magnetic field and any changes caused by solar activity.
- When the box is orange or red, this is good for those of us in lower latitudes in Michigan!
- When the arrows are bolder in size, this means more magnetometers are picking up the strength. This is a good indicator!

SUBSTORM PHASES

- Substorms go through phases: Growth; Expansion; Recovery
- Growth: a building up of energy (like charging a battery). Could last hours or just a few minutes (The Onset of the substorm is right between the Growth and Expansion phases)
- Expansion: release of energy. Aurora is brighter, change shape and intensity. Lasts hours or minutes
- Recovery: return to quieter state. Aurora fades over time to quiet/ambient. But may not mean aurora is done for the night.
- If it is early in the evening/night, keep checking – don't give up too early!

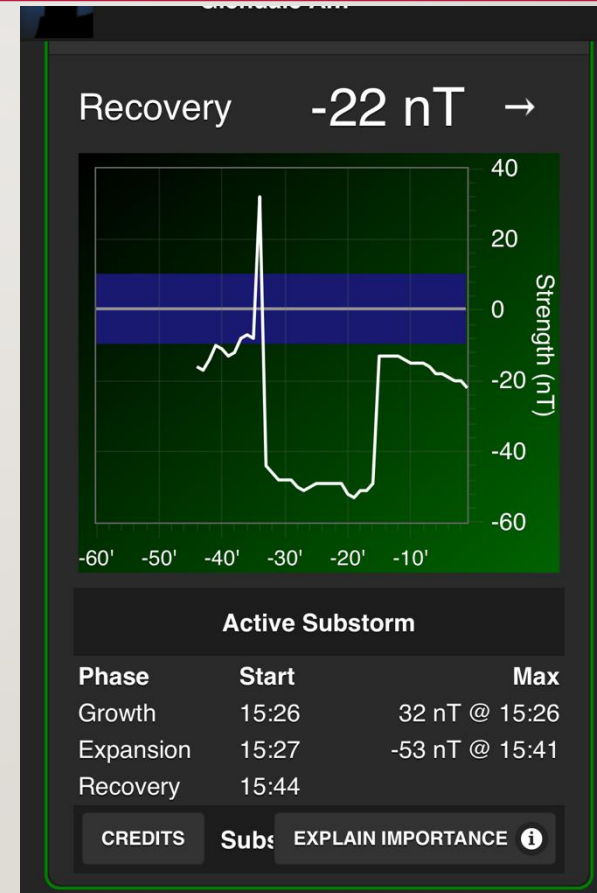
SUBSTORM TRACKER – SHOWS PHASES/TIMES

BELOW THE REPORTS & PHOTOS



Dropping is good for graphs & arrows!

Phase and times are shown under Active Substorm



Note the “i” at bottom right of panels. Click the “i” for more info about that panel.

NOWCAST AND SUBSTORM TRACKER – IT'S NOT ALWAYS GOOD NEWS...

Glendale A... 18:49 EDT (22:49 UT)


Aurora not looking promising for tonight. The IMF is very weak. Check again before dark, as things can change quickly. Prospects are looking poor for the next few hours.

^ Tonight: Mar 19th/20th

07:25 SUBSTORM ONSET.
11 hours

Live Reports

USA Iceland UK EU Australia NZ




What's On Your Camera Now?

From
Thursday, 19
March:
Some days
the
Nowcast
and the
graphs don't
give much
hope!

Glendale A... 18:49 EDT (22:49 UT)

^ Substorms

Ambient **13 nT**



Strength (nT)

-60' -50' -40' -30' -20' -10'

CREDITS Sub: EXPLAIN IMPORTANCE ⓘ

^ IMF (at Earth)

The inbound IMF has been badly aligned for 3 hours. This will inhibit substorm development.

Ambient =
Quiet

IMF PANEL

(AT EARTH IN 1-3 HOURS)

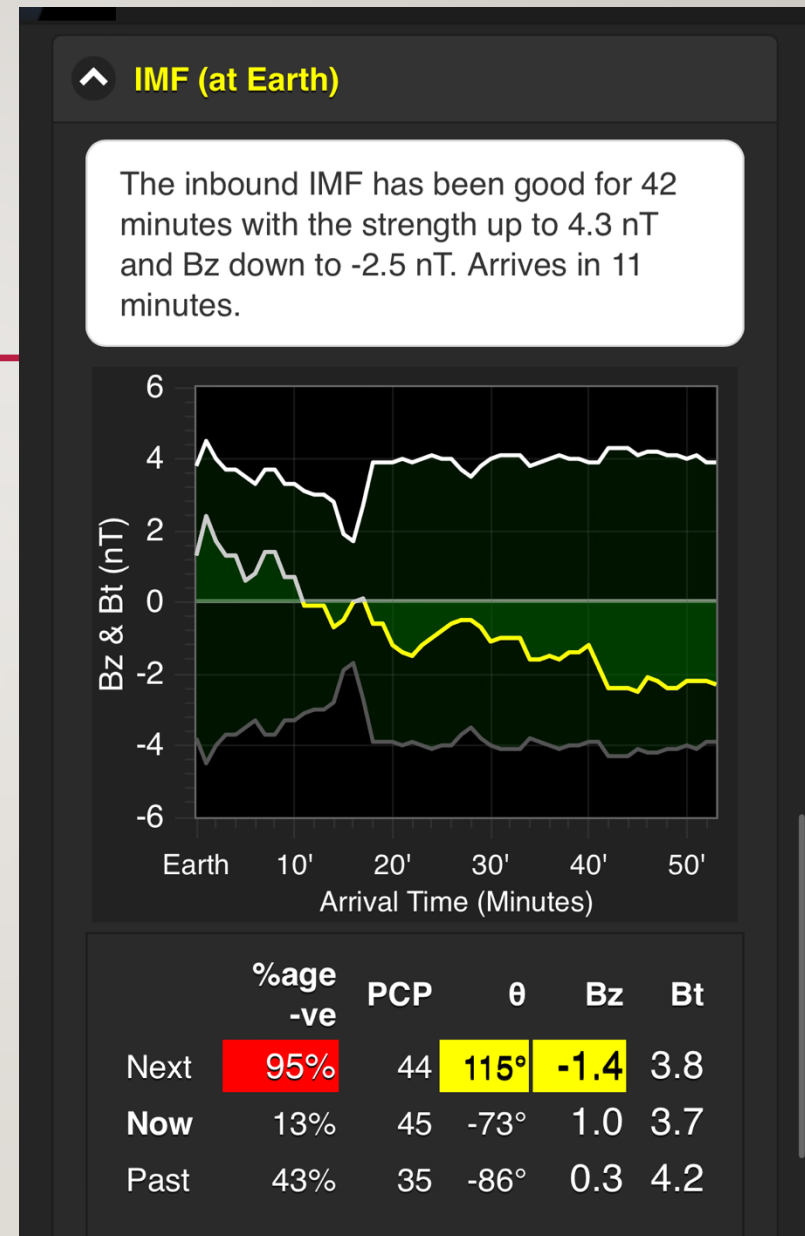
IMF Panel = Interplanetary Magnetic Field
 Tells us about the future – in 1-3 hours

- Sometimes a text box shows with details
- 3 lines of the graph are trendlines showing Bz and Bt arriving at Earth now (LEFT) and at LI satellite (RIGHT).

Bt (actual trend) is at top. Bz (actual trend) in the middle. The best Bz could be is at the bottom. (It mirrors the Bt line at the top)

- Bt IMF = Strength
- Bz IMF = Orientation

We want Bz to be negative. The Column “%age –ve” in the Next, Now, Past shows the percentage negative that Bz will be. 100% is ideal!

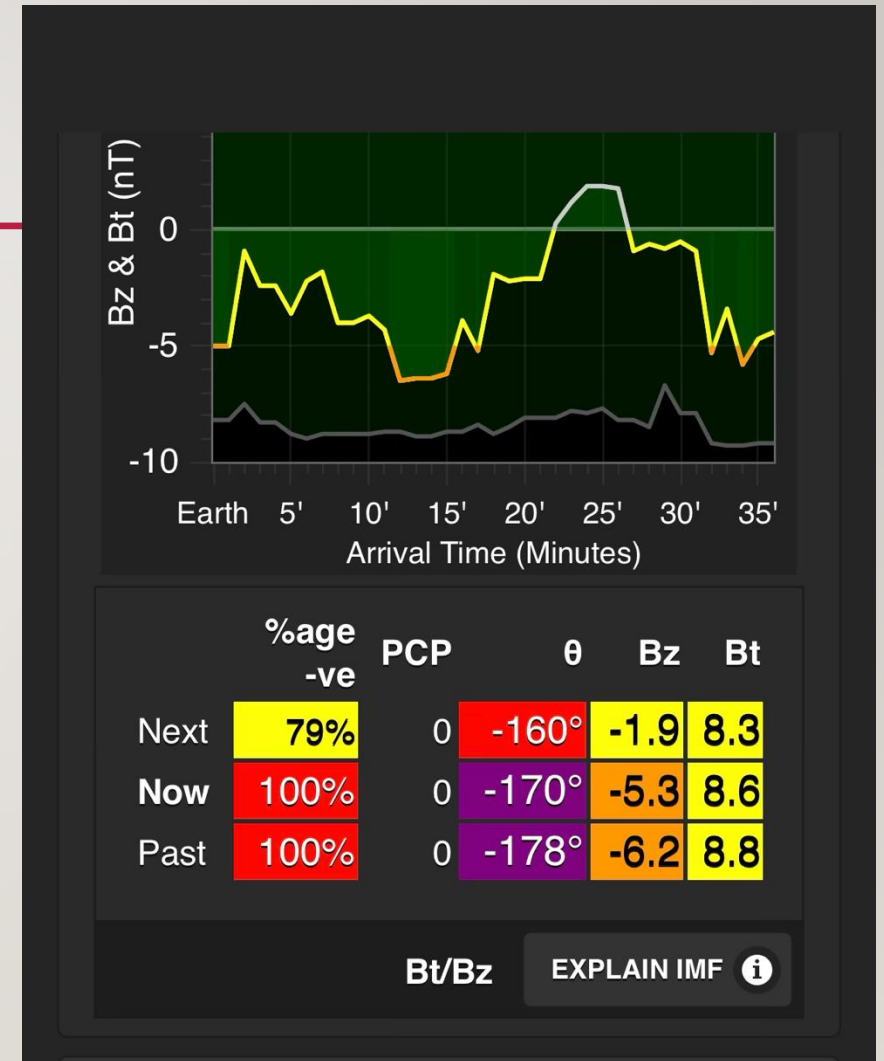


IMF PANEL

(AT EARTH IN 1-3 HOURS)

In this example we see that the rows at the bottom of the panel show our 4 colours – the same as the alerts

- We want to focus on the colours and the 3 columns:
 %age -ve; Bz; and Bt
- When these 3 columns are lit up, aurora is on its way to your location
- When all 3 rows are lit up, this is a good sign
- When these 3 columns and 3 rows are ablaze, you need to be ready!
- Remember the Glendale App's IMF Panel shows aurora in 1-3 hours, meaning this "Now" is really still heading to us.
- Look back up to the Most Important Number, below the map, for what aurora is doing right now.



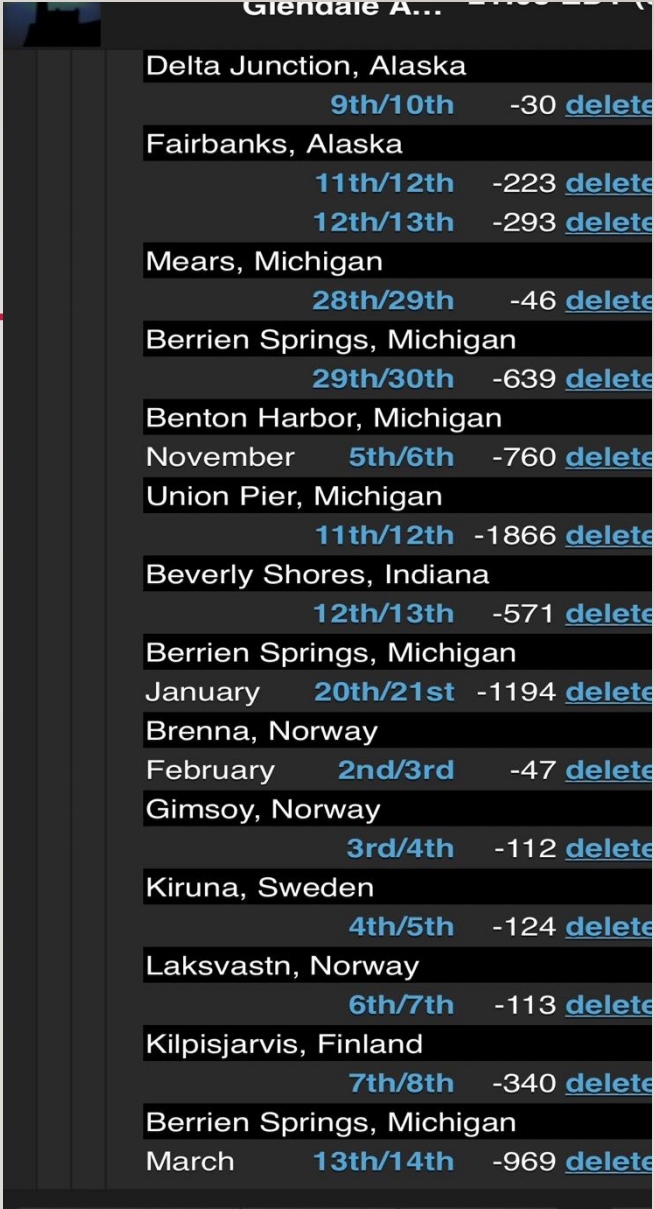
REPORT YOUR AURORA SIGHTINGS

- OR EVEN TIMES YOU DON'T SEE AURORA!

- Report your sightings under the “**Who’s Shouted Tonight?**” section (directly under the Live Reports map)
- First, make sure the section called **Your Details** is correct
 - Scroll almost to the bottom of the app
 - Be sure **Current Location** is correct
 - Click “**Save Changes**”
- Reporting helps others know when aurora is being seen near their area
- Reporting will ‘unlock’ more options for reporting the details of your sightings.
- When you see green check-marks on the map and they are further south than you are, you need to be out!!

WHEN YOU POST YOUR SIGHTINGS, YOUR DATES ARE RECORDED, GIVING YOU A PERSONALIZED, ON-GOING AURORA LOG FOR THE CURRENT SEASON!

- MY REPORTS ARE SHOWN IN THIS SCREENSHOT.
I LIVE AT 41.95°N SO MY VIEWING IS OFTEN LIMITED!
- THESE ARE FROM OCTOBER 2025 IN ALASKA TO MARCH 13/14
AT HOME (PLUS INDIANA, NORWAY, SWEDEN, & FINLAND!)
- YOU CAN ADD REPORTS AFTER THE FACT – IT IS EASY
TO FORGET IN THE EXCITEMENT OF VIEWING (OR YOU
MIGHT NOT HAVE INTERNET ACCESS. **ADD LATE REPORTS**
- IF YOU MAKE A REPORT BY MISTAKE YOU CAN “DELETE” IT



Glendale A...			
Delta Junction, Alaska	9th/10th	-30	delete
Fairbanks, Alaska	11th/12th	-223	delete
	12th/13th	-293	delete
Mears, Michigan	28th/29th	-46	delete
Berrien Springs, Michigan	29th/30th	-639	delete
Benton Harbor, Michigan	November 5th/6th	-760	delete
Union Pier, Michigan	11th/12th	-1866	delete
Beverly Shores, Indiana	12th/13th	-571	delete
Berrien Springs, Michigan	January 20th/21st	-1194	delete
Brenna, Norway	February 2nd/3rd	-47	delete
Gimsoy, Norway	3rd/4th	-112	delete
Kiruna, Sweden	4th/5th	-124	delete
Laksvastn, Norway	6th/7th	-113	delete
Kilpisjarvis, Finland	7th/8th	-340	delete
Berrien Springs, Michigan	March 13th/14th	-969	delete

LONG-RANGE FORECAST PANEL - LAST PANEL FOR TODAY!

The Glendale app shows us the aurora potential in the near future – today/tonight. It is tracking the active substorms which cause aurora.

The Long-Range Forecast Panel helps us with a future forecast.

This panel is meant to be used in the dates that are 10-27 days in the future. It looks back at the sun's activity from coronal holes and active sites. These often return with strength still in them. (Up to 9 days ahead can be seen in the Coronal Holes Panel. **This forecast is only for 10-27 days.**)

This panel is designed to give the user a heads-up, especially when travelling far north for aurora chases. Never a guarantee, of course, but this gives insight into what the sun could be up to soon, based on what happened last rotation (27 days).

	Expected	Max Last Time
Sat	14th / 15th Mar	-927 nT
Dark enough tonight after 20:50 until 14% moon rises at 06:24.		
Sun	15th / 16th Mar	-1863 nT
Dark enough tonight after 20:51 until 9% moon rises at 06:50.		
Mon	16th / 17th Mar	-537 nT
Dark enough tonight after 20:53 until 06:52.		
Tue	17th / 18th Mar	-897 nT
Dark enough tonight after 20:54 until 06:51.		
Wed	18th / 19th Mar	-527 nT
Dark enough tonight after 20:55 until 06:49.		
Thu	19th / 20th Mar	-846 nT
Moon 2% until it sets at 21:03 then dark until 06:47.		
Fri	20th / 21st Mar	-415 nT
Moon 8% until it sets at 23:38 then dark until 06:44.		
Sat	21st / 22nd Mar	-1570 nT
Moon 10% until it sets at 23:38 then dark until 06:44.		
Sun	22nd / 23rd Mar	-874 nT
Moon 22% until it sets at 00:57 then dark until 06:42.		
Mon	23rd / 24th Mar	-911 nT
Moon 32% until it sets at 02:13 then dark until 06:40.		
Tue	24th / 25th Mar	-621 nT
Moon 44% until it sets at 03:21 then dark until 06:38.		
Wed	25th / 26th Mar	-894 nT
Moon 49% until it sets at 04:16 then dark until 06:36.		
Thu	26th / 27th Mar	-778 nT
Moon 63% until it sets at 05:00 then dark until 06:35.		
Fri	27th / 28th Mar	-519 nT
Moon 73% until it sets at 05:34 then dark until 06:33.		
Sat	28th / 29th Mar	-470 nT
Moon is 81% and up all night, so never properly dark.		

USER GUIDE & HELP WITHIN THE APP

- The Glendale App's User Guide is at the bottom of the page (left side). I did not "see" this guide for months after I started using the app! Don't be like me!
- Within the sections of the app, look for a lower case **i** in a white circle at the bottom right of a panel section. This will give you more information about that part. Education is built right into the app!
- You can "open" and "close" sections of the app that you don't want/need to see at the moment. Click on the **V** symbol to open, or the **^** symbol, to close a section
- Access to the FAQs is found at the bottom near the User Guide. Both these helps also use the lower case **i** in a white circle to "click" for more info.
 - Look for Advanced FAQs from within the FAQ section

RESOURCES FOR THE GLENDALE APP

- The User Guide, FAQs, and the lower case **i** in white circles within the app's panels
- Sign up for Telegram alerts
- Follow on facebook: Glendale Skye Auroras for photos of what's being seen there
- Follow Andy Stables on facebook. (He is also a member of Michigan Aurora Chasers!)
- Hendrik Zwart's book: *Aurora – How to Prepare – Predict – Photograph (Your Step by Step Guide – Capture the Aurora with Success)* – has almost 100 pages on the Glendale App (Image on the next slide)
- Space Weather Unplugged on YouTube has an interview with Andy Stables (Nov 29, 2025)

AURORA



PREPARE ✓

PREDICT ✓

PHOTOGRAPH ✓

HENDRIK ANNE ZWART

YOUR STEP BY STEP GUIDE – CAPTURE THE AURORA WITH SUCCESS

IN CONCLUSION

- There are many more panels in the app but these are the main ones I currently refer to.
- If in doubt, stick to the NOWCAST at the top of the app – it will show you what aurora is doing “now!” The Nowcast, along with noting the colours in the panels, will help as you learn.
- The Glendale App is not available in app stores – go to www.aurora-alerts.uk. Set up alerts in the app for Android or in the Telegram app for iPhones. This will help you know when aurora is out.
- Always monitor Earth Weather as it affects our ability to see aurora – clouds, rain, snow, fog...
 - The Glendale App summary in the Nowcast often adds: “Weather permitting in dark-sky areas.”
- During daylight hours, scout out an area that is safe for aurora viewing. Ensure you have a clear view of the northern horizon and have the darkest skies possible.
- Happy Aurora Chasing!

FINLAND 69.05°N

February 7, 2026 (-340 nT)



INDIANA DUNES NP 41.68°N

November 12, 2025 (-571 nt)



Farthest North and South that I have caught the lights!