Ruleset v0.16.5

13 October 2026 | Released validator

Observation alarm + retained v0.16.4 checks

This release adds the reviewed observation alarm to the main validator. The meteorological checking behavior remains that of v0.16.4. This guide comes first; the retained v0.16.4 and earlier rule documents follow for reference.

What is new in v0.16.5

• Compact Alarm settings popup: station, delay and observation schedule. Alarm is OFF by default.

• Set a delay from 1 to 120 minutes (default 8). Choose all 3-hourly observations or main observations at 0000, 0600, 1200 and 1800 UTC.

• Choose Urgent beeps, Ringing alarm or Chime, or upload an MP3/WAV up to 1 MB. Preview and stop the sound before saving.

• Built-in sounds repeat every 5 seconds. Uploaded sounds play up to 30 seconds and repeat after playback plus 1 second, with a minimum 5-second interval between starts.

• Dismiss one reminder, Snooze for 5 minutes, turn OFF, or validate the matching observation to stop it.

Carried forward from v0.16.4

• Red error and amber warning highlights inside the input, plus Copy code and issue reporting.

• Rainfall captions and exact entry follow 3-hour intermediate and 6-hour main periods. Matching period rainfall selects the checkbox; T and Trace are accepted.

• Rainfall review popup and 24-hour checking from four exact six-hour records. Intermediate rainfall is supporting evidence, not an extra amount to add.

• Warning when an exact six-hour amount is below a saved exact three-hour amount within the same period at the same station.

• Tayabas (98427) and Tanay (98433) use station pressure for both pressure-history differences. Other stations retain MSLP.

How to use the alarm

1. Open settings

Click Alarm OFF - Settings near the top of the validator.

2. Select station and timing

Enter the five-digit station number. Choose the delay in minutes and the schedule. All deadlines use UTC. Example: 0600 UTC with an 8-minute delay reminds at 0608 UTC.

3. Choose and preview sound

Choose a built-in sound or upload a nonempty MP3/WAV up to 1 MB. Click Preview sound; Stop preview silences it. Check device volume and browser audio permission.

4. Enable and save

Select Alarm ON and click Save settings. Settings and the uploaded audio stay only in this browser on this site. They are not sent to the site owner.

5. Respond to a reminder

Enter the matching observation and click Validate, Dismiss this observation, Snooze 5 minutes, or turn the alarm OFF.

What counts as an entry?

An explicit click on Validate for a parseable observation at the matching station, UTC date and scheduled time. The entry counts even when errors are found. Typing alone, an old code left in the box, loading the sample, or validating another station does not acknowledge it. The alarm does not verify transmission to communications or completion of corrections.

Important operating limits

Keep the page open and the computer awake. Closing the browser or sleeping the computer prevents a dependable reminder; background tabs may delay it. After a reload, click Preview sound if the browser blocks audio. Settings and recorded entries survive normal browser restarts, but clearing site data or using temporary/private browsing can remove them. Entries and dismissals are retained for 36 hours.

On first activation, or after changing station, schedule or delay, reminders start with the next deadline. Old overdue observations are not replayed. Dismiss applies to one observation only. The main and review sites have separate browser records. Existing pressure and rainfall storage on the main site is preserved.

Update notice and GitHub

Previous v0.16.4 announcement

Retained here as a record of the preceding main-site release. These changes are included in v0.16.5; v0.16.4 had not yet been uploaded to the user's GitHub site when this package was prepared.

PAGASA SYNOP Validator Update - v0.16.4

The updated validator is now available!

• Code highlighting makes flagged errors and warnings easier to locate.

• Rainfall input follows the observation period: 3 hours for intermediate reports and 6 hours for main reports. Matching rainfall automatically checks the box; T or Trace is accepted.

• Rainfall review popup displays saved records and supports 24-hour rainfall checking.

• Rainfall consistency warning appears when the exact six-hour amount is lower than a saved three-hour amount within that period.

• Tayabas and Tanay now use station pressure for pressure-history comparisons.

The updated ruleset PDF is available through the Ruleset version link. Please refresh the page and confirm the displayed version before using it. If you encounter a missed error or an incorrect finding, use Report checker issue.

GitHub upload: one complete update from v0.15

Use the v0.16.5 GitHub package to upload all current pages, JavaScript, CSS and PDFs together. It contains the v0.16.4 changes and the alarm release; no separate v0.16.4 upload is needed. Follow UPLOAD_TO_GITHUB.md, review on a branch, then merge to main.

The Ruleset button links to ruleset.html, and its PDF links are relative. They work on the ChatGPT Site and on GitHub Pages after the complete package is uploaded. Do not mix current HTML with older JavaScript files.

Open the GitHub repository | Open the current main-site ruleset

After upload, open the GitHub Pages URL shown under Settings > Pages. Refresh and confirm Ruleset v0.16.5, PDF download, alarm settings, Preview sound, rainfall review and Copy code. Until that upload, GitHub may continue to show the older release.

The following pages retain the v0.16.4 rule addendum and earlier baseline. Their older version labels are historical references; the current front guide and v0.16.5 site identify this release. Monthly rainfall review remains on the secondary site.

PAGASA SYNOP Validator

Ruleset v0.16.4 | Released 12 October 2026

This is the released application ruleset following review of v0.16.4-review. The consolidated updates below take precedence over any superseded behavior in the attached v0.15.0 baseline. All unchanged baseline checks remain active.

Pressure and code highlights

Tayabas (98427) and Tanay (98433) use station pressure from Section 1 3PPPP for both the 3-hour 5appp and 24-hour 58/59 comparisons. Other stations use MSLP. Station pressure and MSLP are saved separately; previous values must match the station, UTC date/time and pressure basis. Missing history gives an unavailable-comparison warning, not a numerical mismatch. Pressure comparisons are exact to 0.1 hPa.

A usable station-pressure group is required at main times and all observations for the two configured stations. Values outside 500-1100 hPa are errors. Broad configurable review ranges warn outside 850-1085 hPa for Tayabas and 800-1020 hPa for Tanay; these are plausibility settings rather than instrument calibration limits. Pressure decoding below 1000 hPa is corrected: 39917 means 991.7 hPa.

Errors have red backgrounds and warnings amber backgrounds inside the editable code input. Activating a finding selects its first affected token. Missing groups have no token to highlight. Edits clear stale highlights; Copy code returns the original plain text.

Rainfall input and automatic selection

Main observations at 00/06/12/18 UTC use the previous six hours. Intermediate observations at 03/09/15/21 UTC use the previous three hours. Both the checkbox and exact-amount caption follow this duration. The exact amount field appears directly below the checkbox only while checked.

Positive or trace rainfall automatically checks the box only for matching current-period code: intermediate Section 3 6RRR7; main 06/12/18 UTC Section 1 6RRR1; 00 UTC Section 5 2RRRR for 18-24 UTC. A 24-hour total alone, zero, missing or wrong-duration rainfall does not select it. Manual overrides persist while matching rainfall groups stay unchanged. A new observation re-evaluates its code.

Exact numeric amounts are entered in millimetres with at most one decimal place. T and Trace, case insensitive, are accepted. Zero, missing and Trace remain distinct. Intermediate exact quantities are stored separately from six-hour quantities. The input is not filled from rounded SYNOP quantities.

Exact rainfall coding and comparisons

For RRR, 990 means Trace; 991-999 mean 0.1-0.9 mm; larger amounts use whole millimetres. For example, 60074 means 7 mm over 24 hours. The exact amount is compared with the applicable coded representation, including rounding and saturation; the observer-entered exact quantity remains the stored measurement.

Intermediate exact amounts are checked against Section 3 6RRR7. Main 06/12/18 UTC amounts are checked against Section 1 6RRR1; 00 UTC previous-six-hour amounts against Section 5 2RRRR. The confirmed 24-hour total is checked against Section 1 6RRR4 and Section 3 7RRRR, with the latter retaining tenths of a millimetre.

Saved-record review and 24-hour totals

Review rainfall / saved records opens a separate popup. At 00 UTC, it displays the preceding UTC day, with periods ending at 06, 12, 18 and 00 UTC. At other times it shows the current UTC day so far. Unfinished future periods cannot be edited or saved. Labels use month names and UTC times, such as October 15, 0000-0600 UTC. Midnight crossings show both dates.

Only exact nonoverlapping six-hour amounts are summed to form the 24-hour total. Intermediate quantities are supporting evidence and never added again. Save and close stores edits; validate the observation afterward. Missing periods cannot be treated as zero and prevent full verification. A separate measured 24-hour total can still be checked, but does not fill missing records.

A day containing only zero and Trace is a trace day. Mixed trace and measurable rain requires a confirmed measured 24-hour total because Trace has no exact numeric quantity. An entered measured total must agree with a complete numeric sum.

Occurrence evidence and lower-bound warning

Manually confirmed rain, usable coded rainfall and exact saved quantities provide occurrence evidence with their reporting intervals. Evidence wholly inside the next main six-hour period checks for a contradictory zero or absent rainfall amount. At 00 UTC, preceding-24-hour evidence checks both scheduled daily rainfall groups. Conflicting zero coding is an error; an absent matching group gives a review warning. Historical daily rainfall alone does not force recent significant weather or select the checkbox.

At main times, if the exact six-hour quantity is smaller than a saved exact intermediate three-hour quantity wholly inside that period at the same station, issue a WARNING. For example, 03 UTC exact 7.2 mm followed by 06 UTC exact 7.1 mm produces a warning asking the observer to review both entries. Either entry may need correction; neither is changed automatically.

The lower-bound check compares exact amounts in integer tenths, not rounded code numerals. Equal or larger amounts pass. Missing, invalid or trace-only prior quantities do not create a numeric minimum. Current Trace against a saved positive measurable amount gives a warning. At 00 UTC this includes the previous day's 21 UTC record within 18-24 UTC.

Retention, limits and verification

The explicit UTC date must match the AAXX day; AAXX does not contain month/year. Pressure remains eligible for 36 hours after saving and rainfall for eight days. Data stays in this browser and site origin, normally surviving browser closure or restart. Clearing site data, private browsing, storage restrictions or changing browser/device/site can remove or separate records. This is not a permanent archive.

Monthly rainfall coding and reporting-time checks remain active, but monthly accumulation, longer retention, backup export/import and cross-device synchronization are not implemented. All existing cloud, CB nature 4-7, gustiness, visibility, group-order and semantic duplicate checks are retained.

Automated rule, history and page-controller regression checks pass. Browser visual QA is unavailable in this environment. Confirm operational observations against the current station records before transmission.

Baseline provenance

GitHub baseline: rein217/pagasa-synoptic-validator, main commit b90a4ca1541e44aa34846ba3838fba1e98424a28. Updates were reviewed in this project and promoted from v0.16.4-review without changing tested behavior. The following pages retain the baseline rule document for unchanged checks.

PAGASA SYNOP Validator

Operational Checking Ruleset

Version 0.15.0 - Reviewed Branch Update

Document status	Operational review guide
Coding form	WMO FM 12 SYNOP (AAXX), with PAGASA practices
Validator input	One complete observation at a time
Published build	Ruleset v0.15.0
Basis	v0.14.3 operational rules plus reviewed collaborator improvements

Purpose

This document describes the checks implemented in the PAGASA SYNOP Validator for operational review, regression testing, and controlled maintenance. It does not replace the official WMO Manual on Codes, PAGASA observing instructions, or observer judgment.

Important: 'No coded errors detected' means only that the observation passed the rules currently implemented. It is not a certification that every observation or coding decision is correct.

1. Inputs, result levels, and bulletin schedule

Input	Purpose
Complete SYNOP code	Required AAXX observation, preferably with bulletin heading and '=' end marker.
MSLP 3 hours earlier	Exact sign-category and ppp-magnitude check for 5appp.
MSLP 24 hours earlier	Exact signed check of Section 3 58/59 at 00 and 12 UTC.
Rainfall occurred	Manual indicator for rainfall during the six hours immediately before observation.

Finding levels

• **Error:** conflict with required syntax, schedule, arithmetic, or an implemented operational rule.

• **Warning:** possible code that needs observational review or missing supporting information.

• **Information:** an optional section or check is unavailable.

• **OK:** no implemented error or warning was produced.

Bulletin schedule

• SMPH20 is expected at 00, 06, 12, and 18 UTC.

• SIPH20 is expected at 03, 09, 15, and 21 UTC.

• When present, bulletin YYGG is compared with AAXX YYGGiw.

2. Structure, syntax, and duplicate groups

Element	Implemented check
AAXX / YYGGiw / IIiii	Required positions; valid day, hour, iw, and five-digit station identifier.
Mandatory groups	iRixhVV and Nddff immediately follow the station identifier.
Sections	333 begins Section 3 and 555 begins Section 5.
Group format	Five figures or permitted solidi; missing '=' produces a warning.
Section 3 order	Standard Section 3 groups are checked for indicator order.
Section 1 order	After iRixhVV and Nddff, recognized groups must follow indicator order (1, 2, 3, and so on).

Semantic duplicate detection

Single-occurrence Section 1 families are compared by their meaning, not only by exact text. Thus **10313 10312** is an error because both are 1snTTT air-temperature groups. The same approach applies to dew point/humidity, station pressure, MSLP, pressure tendency, present/past weather, and the main cloud group. Legitimately repeatable groups remain allowed.

An Nddff-shaped group found after the mandatory Nddff position is also reported. Example: **70701 23602** is flagged because 23602 contains a valid wind direction 36 but is placed as another wind group.

3. Pressure and local history

Rule	Check
4PPPP plausibility	Configured operational range: 870.0 to 1085.0 hPa.
5appp magnitude	Absolute current-minus-3-hour difference equals ppp exactly to 0.1 hPa.
5appp sign	Positive: a=0-3; negative: a=5-8; zero: a=0,4,5.
24-hour change	At 00/12 UTC, 58 is positive/zero and 59 is negative; exact 0.1 hPa agreement.
Zero change	59000 is rejected; zero uses 58000.

Browser-local MSLP history

- A single structurally valid and plausible 4PPPP value is retained for 36 hours.
- Matching uses station identifier and SYNOP day/hour; manual entries take priority.
- Month-boundary matching is skipped when month/year cannot be known from YYGGiw.
- History stays only in the current browser/device and is not synchronized.

If previous pressure is unavailable, the validator requests it with a warning and does not create a false mismatch.

4. Rainfall, weather, and visibility

Topic	Implemented rule
iR and location	Checks required presence and placement of 6RRRtR in Sections 1 and/or 3.
tR schedule	tR=4 at 00; tR=1 at 06/12/18; tR=7 at 03/09/15/21 UTC.
Manual choice	The code does not auto-select the checkbox. A 24-hour total cannot locate rain within the latest six hours.
Reset	A different YYGGi/station clears the box; corrections within the same observation preserve it.
RRR	001-989 are whole millimetres; 990 is trace; 991-999 are 0.1-0.9 mm. Thus 60074 is 7 mm, tR=4.
Weather	Cross-checks rainfall against applicable ww and W1/W2 indications.

Visibility rules

Phenomenon	Horizontal visibility treatment
Light precipitation	Suggested 9 km or more; lower value gives a warning.
Moderate precipitation	2 km to less than 9 km.
Heavy precipitation	2 km or less; a value above 2 km is an error.
Present weather 40	2 km or less; a value above 2 km is an error.
Present weather 04-06	No mandatory upper limit. Haze-intensity ranges are guidance only.

5. Cloud rules and reportable layers

Cloud checks combine Nddff, h in iRixhVV, 8NhCLCMCH, and Section 3 8NsChshs groups.

PAGASA 1-3-5 selection

• Report the lowest layer at 1 okta or more.

• Report the next higher layer at 3 oktas or more.

• Report the next higher layer at 5 oktas or more.

• Always report Cumulonimbus when not already selected; maximum four reportable groups.

• Order reportable groups from lower to higher bases.

Independent layer amounts

Each Ns is estimated as if other layers did not exist, so layers can overlap. The validator does not add Section 3 Ns values to derive Nh. It does check that an individual low-cloud Ns does not exceed Nh. CB does not imply that no other low cloud exists.

Example: **84908 333 81915 83820 87280 94945** is consistent with Nh=4, one okta CB and three oktas Cumulus.

Sky state

N	Treatment
0	Omit main and individual cloud groups.
9	Omit main cloud group; report 89/hshs vertical visibility.
/	Omit main and individual cloud groups.

6. CB, gustiness, and monthly rainfall

949CD nature codes

C	Meaning
4	Isolated Cumulonimbus
5	Numerous Cumulonimbus
6	Isolated Cumulus and Cumulonimbus
7	Numerous Cumulus and Cumulonimbus

D is direction 0-9. Multiple 949CD groups may be used for CB in different directions. A valid example is **94968**: isolated Cumulus and Cumulonimbus to the north.

Gustiness

A 904tt or 907tt group must be followed immediately by 911ff and 915dd. Orphan speed or direction groups are reported.

Monthly rainfall

At 00 UTC on day 1, Section 5 may contain the six-hour rainfall group and the previous-month total. When the monthly value exceeds 1000 mm, the extended form is **6//// RRRRR**. The five-digit total is interpreted in tenths of a millimetre.

7. Release safeguards and limitations

Regression coverage

• Exact 3-hour and 24-hour pressure differences, including 0.1 hPa failures.

• Main/intermediate bulletin mismatches and bulletin/AAXX time consistency.

• Section 1 out-of-order groups and additional Nddff candidates.

• Heavy precipitation and ww=40 at and above the 2 km boundary.

• Valid and invalid high-cloud obscuration cases.

• Combined Cu/CB 949 codes, unrestricted ww=04-06 visibility, and semantic duplicate groups.

• Manual rainfall reset, same-observation preservation, and RRR trace/decimal decoding.

Known limitations

• The validator sees coded text, not the original instrument readings or sky observation.

• Local pressure history cannot infer month/year and is not shared between devices.

• Suggestions require observer review; the program does not rewrite or transmit an observation automatically.

Maintenance workflow

• Edit routine values in dist/js/ruleset-config.js.

• Edit meteorological logic in dist/js/ruleset.js and interface behavior in dist/js/app.js.

• Add a correct and incorrect regression example for every rule change.

• Run: node tests/ruleset-regression.test.mjs

• Review the v0.15.0 branch before merging it into main.

Operational status

This is an operational review build. Continue comparison with official WMO and PAGASA documentation and record every accepted correction in the changelog.