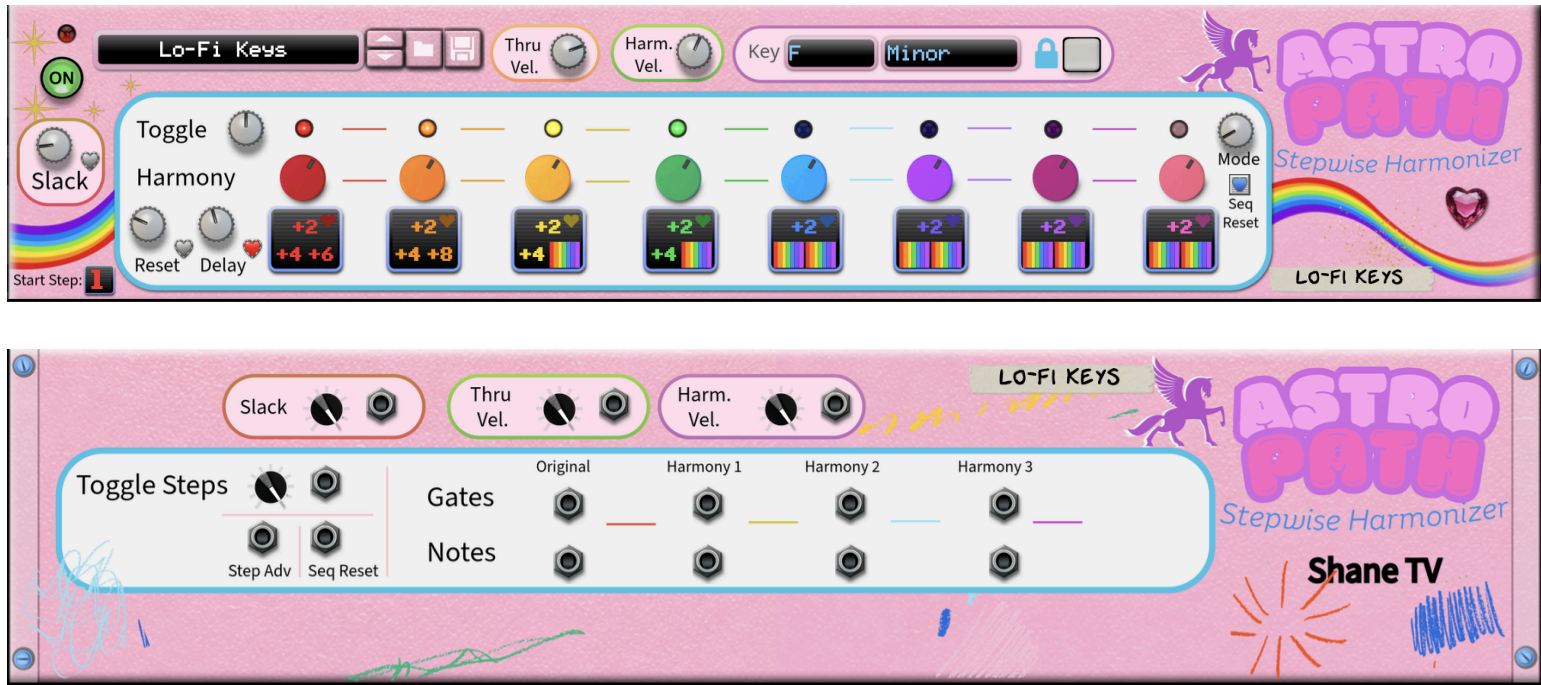


AstroPath Stepwise Harmonizer

Shane TV

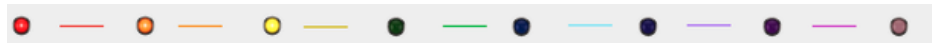


AstroPath is a note-player Rack Extension that turns a single melodic line into an evolving, in-key arrangement. Every note you play passes straight through (the "dry" note) and is simultaneously harmonized by a **step** — a small stack of added intervals. There are up to eight steps, and a cursor advances through them as you play, one step per note. Play a moving line and each note picks up the next step's harmony, so the accompaniment breathes and changes instead of sitting in rigid parallel. Hold or repeat a single note and you'll hear the steps roll by as a progression over a pedal tone. Each step can add up to three voices (one main harmony plus two extra "rainbow" voices), everything is locked to a scale you choose, and a back panel of CV jacks lets AstroPath both receive modulation and send out gate/pitch for the dry note and all three harmonies. This manual walks through the concept, every front-panel and back-panel parameter, and finishes with a set of tips.

How It Works

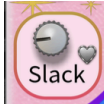
Three ideas are worth holding in your head before diving into the parameters:

The step cursor. AstroPath keeps a cursor that points at one of the active steps indicated by the blinking LEDs.



When you play a note, that note is harmonized with whatever the current step holds, and then — if enough time has passed — the cursor moves to the next step. Over a played phrase, the cursor cycles through the active steps in order and wraps around.

Slack decides "same step" vs "next step."



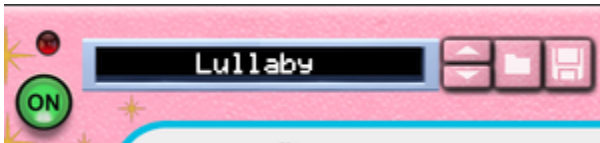
Notes that arrive close together (inside the Slack window) share the current step, so a chord you strum is harmonized as a block. Notes separated by more than Slack advance the cursor, so a melodic line steps through the sequence.

Scale-locked intervals.



The harmony intervals aren't fixed semitones (unless you choose the Chromatic scale). In a diatonic scale they are *scale degrees*, so the harmonies always stay in key no matter which note you play. In a major/minor/modal scale, an interval of +2 is a diatonic third, +4 is a fifth, +6 is a seventh, and +7 is an octave.

Front Panel



Power and Patch

On / Off. The main power button. When AstroPath is **on**, incoming notes are harmonized. When **off**, the device becomes a clean pass-through: your notes go to the next device untouched, with no harmony added. Turning off also stops any harmonies that were sounding.

Playing lamp. The small indicator near the top lights whenever one or more notes are being fed into the device. It's a quick "is signal getting through" check.

Patch name display and browser. Shows the current patch and lets you step through or load patches using the arrows and folder/save buttons, exactly like any other Reason device. AstroPath ships with preset banks; load one as a starting point and tweak from there.

Key Section



Key (Root). Sets the tonic of the scale — C, C#, D, and so on through B. This is the note the scale is built from. Because the harmonies are relative to what you play, the Root mainly matters for how out-of-scale notes get snapped; set it to the key of your song.

Scale. Chooses the scale/mode used to quantize the harmony voices. Nine options are available:

Scale	Character
Major	Bright, standard major-key harmony
Minor	Natural minor, darker
Harmonic Minor	Minor with a raised leading tone; exotic tension
Melodic Minor	Jazz-minor color
Dorian	Minor with a bright natural sixth; modal/jazzy
Phrygian	Dark, Spanish-flavored (flat second)
Lydian	Dreamy, floating (raised fourth)
Mixolydian	Bluesy/rock (dominant seventh)
Chromatic	No quantization; intervals are literal semitones

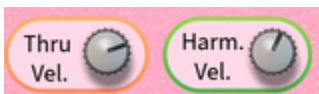
In every diatonic scale the interval knobs and cells count in **scale steps**. In **Chromatic** they count in **semitones**, which is the mode to pick when you want exact intervals (true fifths, tritones, octaves) regardless of key.

Key Lock.



Freezes the harmonization key. Engage it and AstroPath captures the current Root and Scale and keeps harmonizing to them, so that any later changes to the Key/Scale displays (for example from automation elsewhere in your song) won't disturb the harmony. Turn it off to follow the displays again.

Velocity

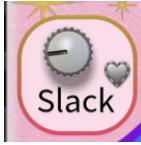


Thru Vel. Sets the output velocity of the dry (pass-through) note. Turned fully down it's soft; fully up, full strength. This is how loud the note *you played* comes out.

Harm. Vel. Sets the output velocity of the harmony notes. Set it lower than Thru Vel to keep harmonies sitting politely under the melody, or match them for a solid block-chord sound.

Timing

Slack.



The grouping window, from 0 up to 500 ms. It's the single most important "feel" control. With **short** Slack, almost every note advances the cursor — great for stepping a melodic line through a sequence. With **long** Slack, notes played close together stay on the same step — great for harmonizing strummed or block chords as a unit. Notes inside the window all take the current step; a gap wider than the window moves to the next step.

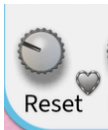
The heart button syncs Slack.

Toggle (Active Steps).



Sets how many steps are in the cursor's cycle, from 0 to 8. (It's labeled "Toggle" on the front panel and "Toggle Steps" on the back.) At 3, only the first three steps are used and the cursor loops 1→2→3→1. At 0, no harmony is produced at all — only the dry note passes. Fewer active steps make tighter, more repetitive patterns; more steps make longer evolving phrases.

Reset.



A silence-triggered cursor reset, from Off up to 2000 ms. When you stop playing (all notes released) for longer than this time, the cursor snaps back to step 1 for the next note, so each new phrase starts from the top of the sequence. The timer begins counting the moment your input ends. Set it to **Off** to let the cursor free-run continuously; set it to a comfortable phrase length so pauses re-align the pattern.

The heart button syncs Reset.

Delay.



A pre-delay applied to the harmony voices only, from 0 up to 1500 ms. The dry note always sounds immediately; the harmonies arrive this many milliseconds later. At 0 there's no delay. Use small values for a subtle slap/echo feel, larger values for call-and-response textures where the harmony answers the note you just played. (Note: the step LEDs and the CV outputs respond at play time, not delayed.)

The heart button syncs Delay.

The Step Row



This is the heart of the instrument: eight steps laid out left to right, each with an LED, a colored Harmony knob, and a display.

Step LEDs (8). The row of small lights above the knobs. A step's LED glows steadily when it's within the active range (set by Toggle/Active Steps), and **strokes** when that step is currently sounding a note you've played — including when its harmony is a plain unison. It's your visual read on where the cursor is and how far the pattern extends.

Harmony knobs (8, colored). Each colored knob sets the **main** harmony interval for its step, from -8 to $+8$, with straight-up (12 o'clock) meaning 0 (unison). This is "Harmony 1" for that step. In a diatonic scale the value is a number of scale steps ($+2$ = third, $+4$ = fifth, $+7$ = octave); in Chromatic it's semitones. The eight knobs, one per step, are what the cursor reads as it advances.

Step displays and the two rainbow voices. Below each knob is a small screen showing that step's contents:



- The **large number** on top is the main harmony (the colored knob's value).
- The **two cells** across the bottom — the "rainbow buttons" — are the step's second and third harmony voices (Harmony 2 and Harmony 3). A cell showing a **rainbow** is off; a cell showing a **number** is on and set to that interval.

Each cell is fully editable right on the display:

- **Click-drag up or down** to scrub its interval through the $-8 \dots +8$ range.
- **Tap** (click without dragging) to toggle the voice on/off.
- **Alt-click** to open a menu and pick a value directly (Off, or -8 through $+8$).

So a single step can stack up to three added voices — the knob plus the two cells — on top of the dry note, for chords of up to four notes per played note.

Reset and Delay knobs sit at the left end of this row, beneath the label area (covered under *Timing* above).



Mode Knob - Determines the pattern that the harmonies jump to. Forward is the default. Other options include Backward, Pendulum, Brownian etc.

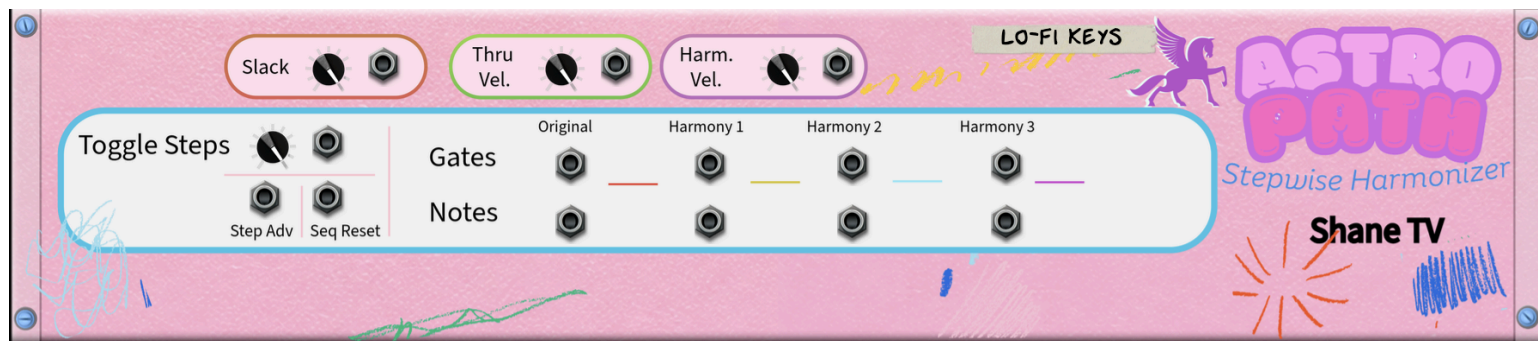
Sequence Reset - Resets the sequence back to the start step.



Start Step - Determines which step plays first after a reset.

Back Panel

Flip the rack around for AstroPath's CV connections. The left group receives modulation; the right group sends note data out.



CV Inputs (with trim)

Each input is a jack paired with a trim knob that scales how strongly the incoming CV affects the parameter. The CV is summed into the knob's own setting, so the panel knob acts as the base value and the CV moves it from there.

- **Slack** — modulate the grouping window. Sweep it to morph between "step every note" and "hold the chord" on the fly.
- **Thru Vel.** — modulate the dry-note velocity.
- **Harm. Vel.** — modulate the harmony velocity (e.g., duck the harmonies under an envelope).
- **Toggle Steps** — modulate the number of active steps, to grow or shrink the pattern length with a control signal.
- **Step Advance** — advances the step via CV
- **Sequence Reset** - manually reset sequence via CV

CV Outputs

AstroPath sends out gate and pitch for four streams, arranged as two rows: **Gates** on top, **Notes** (pitch) below. The four columns are:

- **Original** — the dry note you played.
- **Harmony 1** — the main harmony (the colored knob).
- **Harmony 2** — the first rainbow cell.
- **Harmony 3** — the second rainbow cell.

For each stream, the **Gate** output goes high while that voice is sounding (scaled by velocity) and falls to zero when it releases, and the **Note** output carries the pitch as a control voltage. Patch these into synth voices, envelopes, or effects to have external gear play or track AstroPath's harmonies. The outputs are monophonic and follow the most recent note; if a stream has no voice on a given step (for example a rainbow cell that's off), its gate stays low. CV outputs respond at play time and are not affected by the Delay knob.

Tips and Tricks

Start with Slack to set the feel. Before touching intervals, decide whether you're harmonizing single-note *lines* (short Slack) or *chords* (long Slack). It changes everything about how the sequence behaves.

Use Reset to phrase. Dial Reset to roughly the length of a musical phrase. Then every time you lift your hands, the next phrase re-starts from step 1, keeping your harmonies aligned to the bar instead of drifting.

Make each step different. The instrument shines when the steps aren't identical — a triad on step 1, a seventh on step 2, an open voicing on step 3. As you play a line, the harmony texture keeps changing. Presets whose steps are all the same are really just parallel harmonizers; save those for when you specifically want that effect.

Build chords with all three voices. Set the colored knob to a third (+2 in a diatonic scale), one cell to a fifth (+4), and the other to a seventh (+6), and every note you play becomes a diatonic seventh chord in key. Drop a voice below with a negative value for spread, drop-2-style voicings.

Pedal-tone progressions. Hold or repeat one note with a longish Slack so the cursor still advances, and let the steps roll by. You'll hear a chord progression built on a single bass note — great for pads and intros.

Chromatic mode for exact intervals. Switch the Scale to Chromatic when you want guaranteed octaves, fifths, or tritones that don't bend to a key. Remember the range is ± 8 semitones per voice, so the biggest single interval is a minor sixth; get larger spreads by combining an up voice and a down voice.

Keep harmonies under the melody. Setting Harm. Vel. a little below Thru Vel. keeps the line you played on top and the harmonies supporting it — a quick way to a mix-ready balance before the notes ever leave the device.

Delay for call-and-response. A Delay of a few hundred milliseconds turns the harmony into an answer to your phrase rather than a simultaneous chord. Pair it with a moderate Slack so each note's answer lands cleanly.

Lock the key before automating. If you're automating anything near the Key/Scale displays, engage Key Lock first so the harmonization stays put and only the parameters you meant to move actually move.

Send the harmonies to real voices. Use the CV Note and Gate outputs to drive separate synth voices per harmony line. Because Original, Harmony 1, 2, and 3 come out on their own jacks, you can give each one its own patch, panning, and processing for a full arranged sound from a single played line.