ENKIDU LIGHT

CONSCIOUSNESS SERIES · READER EDITION

States of Consciousness

and Their Applications in Brainwave Entrainment

The Mandukya Upanishad's four states of consciousness, the Buddhist observer mind, and the neuroscience of gamma, theta, alpha, and delta — united in a practical guide for Enkidu Light AVE users.

Adel Moradi · enkidulight.com

CONTENTS

PART ONE

Consciousness in the Mandukya Upanishad: A Modern Perspective

The Mandukya Upanishad — one of the most compact and densely meaningful texts in the Vedantic tradition, comprising just twelve verses — maps the totality of human consciousness onto four states and onto the sacred syllable AUM. Written between 500–200 BCE, it begins with a statement of astonishing scope: 'All this is indeed AUM.' What follows is not poetry alone but a precise phenomenological cartography — a description of how awareness moves through waking, dreaming, deep sleep, and a fourth state that underlies them all. Contemporary neuroscience has, in the century since EEG was first recorded, independently arrived at a remarkably convergent set of observations about consciousness and its neural correlates. That convergence — between a 2,500-year-old contemplative text and twenty-first-century brain science — is the subject of this guide.

THE FOUR STATES AND THEIR NEURAL PARALLELS

Vaishvanara

Beta · 13–30 Hz

Waking State

Outward consciousness. External sensory engagement. Active cognitive processing. The world of doing.

Taijasa

Theta · 4–8 Hz

Dreaming State

Inward consciousness. Subconscious imagery. Memory and emotion. The world of inner creation.

Prajna

Delta · 0.5–4 Hz

Deep Sleep

Undifferentiated rest. Potentiality without form. Restorative stillness. Beyond dreaming.

Turiya

Gamma · 30+ Hz / Beyond

Pure Awareness

The ground of all states. Non-dual awareness. The silence after AUM. Your fundamental nature.

THE FOUR STATES IN DEPTH

Vaishvanara — the Waking State (Beta: 13–30 Hz). The Mandukya describes Vaishvanara as outward-turned consciousness, engaged with the sensory world through seven limbs and nineteen channels. Modern EEG confirms this as the domain of beta-wave dominance: fast, relatively low-amplitude oscillations reflecting active engagement, decision-making, executive function, and the processing of continuous sensory input. Beta activity is highest in the prefrontal cortex during effortful cognition. The Upanishad's description of Vaishvanara as 'the enjoyer of gross objects' — of external phenomena — maps precisely onto what neuroscience describes as the externally-directed attention network, driven by the dorsal frontoparietal system and the salience network.

Taijasa — the Dreaming State (Theta: 4–8 Hz, with mixed Alpha/Beta). Taijasa is inward-turned consciousness — the mind active upon its own content rather than on external reality. The Upanishad describes it as the state where consciousness 'enacts the impressions of past deeds and present desires.' Modern neuroscience identifies this with REM sleep: a state in which the body is paralysed while the brain is highly active, generating a self-produced world of imagery, emotion, and memory consolidation. Theta waves (4–8 Hz) are the dominant signature, associated with creativity, hypnagogic imagery, and access to subconscious material. The dreaming brain and the meditating brain share this frequency domain — and the Upanishad's framing of Taijasa as a 'middle' state between outer and inner aligns with theta's functional role as the bridge between waking analytical cognition and the deeper regulatory systems of the brain.

Prajna — Deep Sleep (Delta: 0.5–4 Hz). Prajna is described as the state of undifferentiated consciousness — no dreaming, no sensing, no separation between self and world. The Upanishad calls it 'pure potentiality,' the ground from which waking and dreaming emerge. Delta-wave dominance during deep NREM sleep is the modern correlate: the slowest neural oscillations, sweeping synchronously from front to back of the cortex, associated with physical restoration, glymphatic clearance (the brain washing out metabolic waste), and memory consolidation. Crucially, the Mandukya notes that Prajna contains profound rest, but that the sleeper is not conscious of it — which maps precisely onto the absence of reportable experience in deep sleep, while all restorative processes continue beneath awareness.

Turiya — Pure Awareness (Gamma: 30–100 Hz and beyond ordinary categorisation). The fourth state is where the Upanishad most challenges neuroscience — and where the most compelling recent evidence has emerged. Turiya is described as neither inward nor outward, beyond sensory experience and beyond intellect, the silent awareness in which all other states arise and dissolve. A landmark 2024 bioRxiv study by Tononi and colleagues, recording 256-electrode high-density EEG in advanced Vajrayana and Zen meditators who could enter states of 'pure presence' (PP), found that these states — described phenomenologically as vivid, contentless, non-dual awareness — were characterised by *decreased* broadband EEG power, most pronounced in the gamma range, alongside markedly decreased delta compared to dreamless sleep. The cortex was maximally awake yet minimally active. This is consistent with Integrated Information Theory's prediction that pure awareness may correspond to a highly integrated but informationally sparse neural state. A 2025 biorxiv paper on advanced meditators further found that non-dual awareness is associated with convergence of the brain's intrinsic neural timescales across internal and external attention tasks — the neural signature of

non-separateness between observer and observed. These findings do not reduce Turiya to a brain state; they suggest that its territory is, remarkably, accessible to empirical investigation.

TURIYA: THE ULTIMATE REALITY

Turiya is not presented by the Upanishad as a rare or exotic achievement. It is described as the ground of the other three states — the awareness in which waking, dreaming, and deep sleep all occur. The metaphor used is of a thread through beads: Turiya does not replace the other states but runs through them. In Vedantic philosophy, the recognition of Turiya as one's own nature — not an object of experience but the experiencing itself — is Moksha, liberation from the cycle of suffering and identification. Modern contemplative neuroscience, in the language of 'non-representational reflexivity' (the capacity to be aware without conceptual representation), is approaching the same territory from the other direction. A 2025 PMC review of advanced meditation research characterises the highest meditative states as including 'non-dual awareness and cessations of consciousness' marked by 'deep equanimity, refined sensory clarity, and cognitive flexibility both during and outside of meditation' — a functional description that maps closely onto the Upanishad's account of Turiya as the ground of abiding joy.

THE BRIDGE BETWEEN TRADITIONS

The convergence between the Mandukya's four states and modern brainwave research is not merely analogical. It reveals that the ancient contemplatives — through direct introspective investigation conducted with extraordinary rigour across millennia — mapped the same phenomenological territory that neuroscience is now mapping from the outside, with electrodes. The Upanishad offers something neuroscience alone cannot: a metaphysical framework that explains *why* these states matter and what they point toward. Modern science offers what the Upanishad could not: objective, replicable, intersubjective verification. Together, they form a more complete map of consciousness than either tradition can provide alone.

> *"The fourth is the superconscious state called Turiya, neither inward nor outward, beyond the senses and the intellect, in which there is none other than the Lord. He is the supreme goal of life. He is infinite peace and love. Realise him!"*
>
> *— Mandukya Upanishad, verse 7 (trans. Eknath Easwaran)*

PART TWO

The Observer Mind: Buddhist Tradition and Neuroscience

In the Buddhist Theravada tradition, the cultivation of the observer mind is formalised in the practice of Sati — mindfulness — as taught in the Satipatthana Sutta, the Discourse on the Foundations of Mindfulness. The practitioner is instructed to observe the body (kaya), feelings (vedana), mental states (citta), and mental phenomena (dhamma) continuously, without identification or reactivity. This 'bare attention' — knowing what is present without being swept into it — is the operational definition of the observer mind. A 2025 Frontiers in Psychology study (Wang, Zhejiang University) reviewed the neuroscience and psychology of Buddhist meditation, confirming that Vipassana (open monitoring) and Samatha (focused attention) transform consciousness through distinct pathways: strengthened attentional stability, reshaped self-referential processing, and reorganised emotional patterns, visible in altered default-mode network activity and characteristic EEG signatures.

THE OBSERVER MIND IN THE BRAIN

The observer mind has a specific neural geography. Metacognition — the capacity to observe one's own mental processes — is associated with the medial prefrontal cortex, the anterior cingulate cortex (ACC), the precuneus, and the posterior cingulate cortex (PCC). These regions, which form the core of the Default Mode Network (DMN), are most active not during task performance but during self-referential thought and introspection. The practised meditator is not a person who thinks less about themselves — they are a person who observes their self-referential thoughts from a greater distance. A 2022 Scientific Reports study found that mindfulness practice increases connectivity between the DMN and the central executive network — the neural signature of monitoring one's own processing rather than being driven by it. Experienced Buddhist meditators show increased gamma synchrony between medial prefrontal and parietal areas at rest, interpreted as 'enhanced conscious awareness of the present moment.' A 2023 Brain and Cognition study on open monitoring meditators found greater right intra-hemispheric gamma coherence, suggesting that the observer mind has a measurable structural preference for integrative, non-linear awareness over the left hemisphere's sequential, narrative processing.

THE OBSERVER ACROSS BRAINWAVE STATES

The observer mind is not static — it operates differently at each brainwave frequency, and its quality deepens as frequency descends. In the beta state (waking cognition), it functions as metacognitive attention: the ability to notice one's thoughts without immediately following them. As entrainment or meditation shifts the brain toward alpha (8–13 Hz), the observer becomes more spacious — less reactive, more receptive, with reduced amygdala activation and greater interoceptive clarity. In the theta state (4–8 Hz), the observer must actively maintain its presence against the pull of hypnagogic imagery, associative memory, and the dissolution of ordinary boundaries — making theta the training ground for the deepest introspective work. In delta states (0.5–4 Hz) accessible in advanced practice, the observer

persists at the edge of ordinary consciousness. And in what the Upanishad calls Turiya — the state the Buddhist tradition calls *nirodha samapatti* or cessation — the observer dissolves into the observing itself. Neuroscience now confirms that this endpoint exists: a 2025 biorxiv multimodal EEG-MEG study documented 'extended cessation' (EC) in advanced meditators — intentional, sustained non-conscious states phenomenologically distinct from sleep, anaesthesia, or coma, characterised by immense post-cessation clarity and peace.

TURIYA AND THE BUDDHIST OBSERVER: ONE TERRITORY

The Vedantic concept of Turiya and the Buddhist concept of the fully realised observer mind describe the same experiential territory from different philosophical orientations. Turiya is Atman recognising itself as Brahman — individual awareness recognising its identity with universal consciousness. The Buddhist observer mind, fully matured, recognises anatta — the absence of a fixed, independent self — leading to the same non-dual recognition by a different philosophical route. Both traditions agree on the functional result: freedom from reactive identification, freedom from the tyranny of the narrative self, and a quality of presence that is simultaneously fully awake and free from agitation. The brainwave correlates — decreased broadband power, convergent neural timescales across internal and external attention, high precuneus and medial prefrontal activity — are consistent across both traditions.

> *"Vipassana is all about witnessing the arising and ceasing of phenomena and discovering the causal link that joins them."*
>
> *— Satipatthana Sutta (from Rodriguez & Molloy, Integral Vipassana, 2023)*

PART THREE

BWE with Enkidu Light: A Practical Framework

Audio-Visual Entrainment (AVE) — the simultaneous delivery of rhythmically pulsed light and sound at precise frequencies — is one of the most direct technological methods for guiding the brain into specific brainwave states. The mechanism is the Frequency-Following Response (FFR): the brain's innate tendency to synchronise its electrical oscillatory activity to periodic external stimuli. AVE exploits both the visual pathway (photic driving via the retina, lateral geniculate nucleus, and visual cortex) and the auditory pathway (binaural beats or isochronic tones processed through the brainstem and thalamocortical loops). Together these pathways create a powerful, bilateral, multisensory entrainment signal that can shift dominant brainwave frequency within minutes. This has practical implications for the conscious exploration of the four states mapped in the Mandukya Upanishad and for the development of the observer mind described in the Buddhist contemplative tradition.

THE FOUR FREQUENCIES AND THE FOUR STATES

Alpha (8–13 Hz) — The Gate of the Observer. Alpha sessions are the natural entry point for new users and for experienced practitioners beginning a session. Alpha is the frequency of relaxed, open awareness — the eyes-closed resting state characterised by reduced cortical excitability, lower amygdala reactivity, and increased interoceptive awareness. In Upanishadic terms, alpha represents the initial movement away from Vaishvanara toward the interior — the turning of attention inward. For the observer mind, alpha creates the first quiet space in which thoughts can be noticed rather than immediately acted upon. A 2024 IBRO Neuroscience study confirmed that isochronic tonal stimulation in the alpha range produces measurable reductions in beta power alongside alpha increases, with effects persisting after stimulation ends — suggesting that AVE creates not merely a temporary state but a neural momentum.

Theta (4–8 Hz) — The Hypnagogic Bridge. Theta is the frequency of the hypnagogic state — the threshold between waking and sleep, between conscious and subconscious. It corresponds to Taijasa in the Mandukya: consciousness turned inward, active upon its own content. Theta AVE sessions are among the most potent tools in the Enkidu Light protocol library because they place the practitioner precisely at the neurological boundary where ordinary cognitive control weakens and deeper material becomes accessible — while the observer mind, if trained, can remain present as a witness to that material. A study using 6 Hz binaural beats demonstrated significant increases in theta activity across frontal and parietal-central regions after 10 minutes, alongside decreases in beta — the theta/beta shift that characterises both deep meditation and the transition into the hypnagogic state. The practice instruction here is simple but essential: do not follow the imagery. Witness it.

Delta (0.5–4 Hz) — The Restorative Depth. Delta sessions guide the brain toward the frequencies of deep, dreamless sleep — Prajna in the Mandukya — the state of undifferentiated rest and potentiality. For most users, delta sessions will produce deep relaxation or light sleep rather than conscious

awareness. This is appropriate and beneficial: delta-range AVE enhances the restorative functions of slow-wave sleep, including glymphatic clearance and physical restoration. For advanced practitioners, delta sessions can be used to explore the edges of consciousness — the boundary at which the ordinary observer dissolves. The recommended approach for beginners is to use delta sessions purely for restoration, without attempting to maintain waking awareness, allowing the body's natural healing processes to proceed unimpeded.

Gamma (30–100 Hz) — Integration and the Bridge to Turiya. Gamma is the frequency of information integration — the Communication Through Coherence (CTC) mechanism by which spatially separate brain regions synchronise to exchange information without requiring direct anatomical connection. A 2019 eNeuro study demonstrated that gamma-band synchronisation enables dynamic information routing between cortical areas; the 2004 Lutz et al. PNAS study found that long-term meditators self-induced high-amplitude gamma synchrony during mental practice, with gamma power positively correlated with years of meditation experience. A 2024 bioRxiv preprint (biorxiv.org/content/10.1101/2024.02.19) found that experienced meditators show enhanced stimulus-free gamma in both eyes-open and eyes-closed conditions compared to controls. In Upanishadic terms, gamma represents the integration of all streams into the unified, contentless awareness of Turiya. Gamma AVE sessions — particularly the 40 Hz protocols used in Enkidu Apollo II and Luna II — are best used by practitioners who are already comfortable holding the observer position in alpha and theta, and who wish to experience the quality of integration and presence that gamma coherence facilitates.

THE OBSERVER MIND AS YOUR PRACTICE FOUNDATION

The most important principle in using Enkidu Light AVE devices for consciousness exploration is one that the Buddhist tradition has known for centuries and that the Mandukya Upanishad implies in its description of Turiya: the quality of awareness you bring to a session determines what that session can open. AVE entrains the brain's frequency, but frequency alone does not guarantee the observer mind. A theta session experienced without observer awareness is simply sleep. The same theta session experienced with a trained observer — watching the hypnagogic imagery arise and dissolve without being swept in — is a direct exploration of Taijasa, the dreaming state, from within waking awareness. This is the practice: use the entrainment as the carrier wave, and bring the observer as the passenger. The lamp guides the frequency; you provide the witnessing.

A STEP-BY-STEP METHOD FOR CONSCIOUS ENTRAINMENT

The following practical method integrates the Upanishadic framework, Buddhist observer-mind training, and Enkidu Light AVE protocols into a progressive sequence suitable for all experience levels.

1. Set Your Intention Before the Session. The Mandukya Upanishad opens each description of a state with a functional definition of what consciousness is doing in that state. Before beginning your AVE session, take 60–90 seconds to consciously articulate to yourself which territory you are entering. For an alpha session: 'I am turning attention inward.' For theta: 'I am witnessing the threshold between

waking and dreaming.' For gamma: 'I am inviting integration and presence.' Intention is not merely psychological — it pre-activates relevant neural networks and primes the DMN for introspective rather than evaluative processing.

2. Establish the Observer Before Entrainment Begins. Spend 2–3 minutes before activating your Enkidu device in simple breath observation: notice the physical sensation of breath entering and leaving the body, without controlling it. This activates the insula-mediated interoceptive network and establishes a basic observer position. The Buddhist tradition calls this 'taking your seat' — the meditator is present before the content of the session begins.

3. Use the Stimuli as Anchor, Not Content. When the light and sound begin, allow them to become the primary object of attention — not something to be analysed but something to be absorbed into. The flickering patterns of the Enkidu lamp create complex visual phenomena; treat them as you would a mantra or a meditation object: return to them whenever the mind wanders into ordinary thought. This is the same instruction given in Vipassana practice for working with any object of attention.

4. Witness the State Shifts Without Identifying With Them. As the session progresses and your dominant brainwave frequency shifts toward the target, you will notice changes: slower thought, reduced body awareness, visual imagery, unusual perceptions. The Satipatthana Sutta instruction applies directly: note these changes ('imagery arising,' 'body dissolving,' 'stillness deepening') without identifying with them or following them. You are in Taijasa, watching the dreaming mind. You are approaching Prajna, watching the edge of sleep. The observer does not need to go anywhere — it watches the brain go there.

5. Remain Awake as the Cortex Quiets. The greatest challenge in theta and delta AVE sessions is preventing the observer from dissolving into sleep. Several techniques support this: periodic micro-movements of fingers or toes (proprioceptive stimulation without disturbing the session), mental noting ('I am aware,' silently, whenever awareness becomes unclear), and intentional slow exhalations, which engage the parasympathetic system and sustain light tonal presence without arousing the cortex. Short initial sessions (10–15 minutes) are recommended before attempting longer explorations.

6. The Post-Session Integration Window. The 5–10 minutes immediately following a theta or gamma session are neurologically significant: the brain is returning from an altered state and is in a heightened state of plasticity and receptivity. This is the period most analogous to the contemplative practices of reflection and integration. Sit quietly, allow the ordinary cognitive mode to return gradually, and note — without elaborating — any qualities of the state that linger: stillness, spaciousness, clarity, or a particular quality of presence. Over time, these qualities of the entrainment state become available outside of sessions: the observer mind, once trained in the context of AVE, begins to function as a background capacity in ordinary waking life.

CONCLUSION

The Mandukya Upanishad concludes with a statement that has the character of both instruction and revelation: 'Those who know AUM as the Self become the Self; truly they become the Self.' The

knowing referred to here is not intellectual. It is the direct recognition — in experience, in the silence after the sound, in the awareness that persists when all content dissolves — of what one fundamentally is. Brainwave entrainment with the Enkidu Light system does not manufacture this recognition. What it does — when used with the awareness cultivated in the Buddhist observer tradition and the understanding provided by the Mandukya framework — is methodically remove the obstacles to it: the relentless cortical chatter, the identification with the narrative self, the fear of stillness, the unfamiliarity with states other than ordinary waking consciousness. The map of the four states is ancient and reliable. The tools have never been more precise. The territory is your own awareness.

"AUM stands for the supreme Reality. It is a symbol for what was, what is, and what shall be. AUM represents also what lies beyond past, present, and future."

— Mandukya Upanishad, verse 1 (trans. Eknath Easwaran)

Research References

Key References: Mandukya Upanishad (trans. Eknath Easwaran, 1987; Swami Nikhilananda, 1949). Satipatthana Sutta — Pali Canon (trans. Analayo, Bhikkhu, 2006). Wang C. (2025) 'Beyond mindfulness: how Buddhist meditation transforms consciousness through distinct psychological pathways.' Front. Psychol. 16:1649564. Tononi G. et al. (2024) 'Neural correlates of pure presence.' bioRxiv 2024.04.18.590081. Northoff G. et al. (2025) 'Non-duality in brain and experience of advanced meditators.' bioRxiv 2025.04.21.649758. Laukkonen R. et al. (2025) 'Neuroelectrophysiological correlates of extended cessation of consciousness in advanced meditators.' bioRxiv 2025.09.19. Lutz A. et al. (2004) 'Long-term meditators self-induce high-amplitude gamma synchrony.' PNAS 101(46):16369–16373. Meditators Enhanced Gamma (2024) bioRxiv 2024.02.19.581028. Scientific Reports (2022) — mindfulness and DMN connectivity. Brain and Cognition (2023) — gamma coherence in open-monitoring meditators. IBRO Neuroscience (2024) — isochronic tone entrainment. PMC (2025) — 'Mindfulness, cognition, and long-term meditators.' Sacchet M. et al., Frontiers. Vipassana in educational settings — Tandfonline (2025). eNeuro (2019) — gamma synchrony and inter-regional communication.

Apollo II · Luna II · Lyra · Vega · Juno · VibroSync · enkidulight.com