



Louis XIV dressed as Apollo the sun god for Jean-Baptiste Lully's "Ballet de la Nuit." (Henri de Gissey, 1653)

4.024 Mohamad Nahleh

UNDER FOUR SUNS

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Schedule: TRF 1:00 – 5:00 pm EST

7-403

Credits: 0 – 12 – 12 U

SETTING THE STAGE

Countless comets, meteors, and lunar eclipses populated the Parisian sky in the seventeenth century; and yet, despite their long-awaited spectacles, they were no match for the celestial event of 1653. It was on February 23, ten hours into the *Ballet de la Nuit* (Royal Ballet of the Night) that the world witnessed the birth of a new sun. Its brightness radiated, not from the depths of the universe, but from the Petit-Bourbon in Paris, where Louis XIV of France appeared on stage and presented himself as *le Roi Soleil*, or the Sun King. With shimmering curls and a dazzling dress, the fourteen-year-old king danced to commemorate the dawn of a (symbolic) new day. In dispelling the darkness of the night, he proclaimed the end of the *Fronde*, the revolt of the nobles, and celebrated the divine power of the monarchy. Steeped in political and religious symbolism, his celebration relied on a seemingly inevitable battle between light and darkness. But more importantly, it relied, against the will of the Church, on an unprecedented recognition of the Copernican Revolution. For in acknowledging the position of the sun (rather than the earth) at the center of our solar system, the Sun King declared France as the center of the world.

Despite its unrivaled splendor, the *Ballet de la Nuit* did not postulate a new construction of the night. Instead, it perpetuated, and perhaps weaponized, the same attitudes toward darkness that had existed for centuries. But it was toward the close of the nineteenth century, when the industrialization of artificial illumination in Europe allowed states to lay claim over darkness, that the criminalization of the night witnessed a remarkable surge. Furthered by the monopolization of mechanical typesetting, narratives of safety and security sought to justify this new colonization. But rather than a weapon of social order, lighting prolonged the lavish lifestyles of those who could afford the luxury of identification and delayed slumber, and extended the hours of labor for those who could not. Tasked with the apprehension of ‘suspicious’ figures, streetlights burned clear boundaries within the city. Suspicion, however, lies in the eye of the beholder. And it is the strongest beholder whose piercing gaze policed the earlier subcultures of the night.

That ‘night design’ exists today as a set of operations that work to prolong the day is thus not surprising. For darkness, in its sinful form, casts a shadow on a variety of practices, disciplines, and beliefs. In building a new alliance between light and darkness, this studio will operate outside Eurocentric constructions of value that have, through the so-called rationality of the enlightenment, forged a seemingly unyielding relationship between eyesight and insight, and between vision and morality. In doing so, it will ask: how can we move towards a discussion of architecture that understands the night not as a narrow period of negation, but as an amorphous space capable of embodying both the mundane and the spectacular? The studio will thus reject dualistic perspectives of night vs. day, sleep vs. wakefulness, cosmos vs. body, and foreground instead the temporary and eternal laws that govern their relationships. Rather than a backdrop against which traditional modes of practice might be celebrated, the darkening sky in this studio will emerge as an analytical tool that examines the agency of darkness and the complexity of its social and territorial transformations. Mediating between extensions to the body and extensions to the city, students will build on foundational tools—namely, drawing and making—and on architectural theory and building technology to design equity across both space and time.

City of New-York, *fs.*

A L A W

For Regulating Negroes and Slaves in the Night Time.

BE It Ordained by the Mayor, Recorder, Aldermen and Assistants of the City of New-York, convened in Common-Council, and it is hereby Ordained by the Authority of the same, That from hence-forth no Negro, Mulatto or Indian Slave, above the Age of Fourteen Years, do presume to be or appear in any of the Streets of this City, on the South-side of the Fresh-Water, in the Night time, above an hour after Sun-set; And that if any such Negro, Mulatto or Indian Slave or Slaves, as aforesaid, shall be found in any of the Streets of this City, or in any other Place, on the South side of the Fresh-Water, in the Night-time, above one hour after Sun-set, without a Lanthorn and lighted Candle in it, so as the light thereof may be plainly seen (and not in company with his, her or their Master or Mistress, or some White Person or White Servant belonging to the Family whose Slave he or she is, or in whose Service he or she then are) That then and in such case it shall and may be lawful for any of his Majesty's Subjects within the said City to apprehend such Slave or Slaves, not having such Lanthorn and Candle, and forth-with carry him, her or them before the Mayor or Recorder, or any one of the Aldermen of the said City (if at a seasonable hour) and if at an unseasonable hour, to the Watch-house, there to be confined until the next Morning) who are hereby authorized, upon Proof of the Offence, to commit such Slave or Slaves to the common Goal, for such his, her or their Contempt, and there to remain until the Master, Mistress or Owner of every such Slave or Slaves, shall pay to the Person or Persons who apprehended and committed every such Slave or Slaves, the Sum of *Four Shillings* current Money of *New-York*, for his, her or their pains and Trouble therein, with Reasonable Charges of Prosecution.

And be it further Ordained by the Authority aforesaid, That every Slave or Slaves that shall be convicted of the Offence aforesaid, before he, she or they be discharged out of Custody, shall be Whipped at the Publick Whipping-Post (not exceeding Forty Lashes) if desired by the Master or Owner of such Slave or Slaves.

Provided always, and it is the intent hereof, That if two or more Slaves (Not exceeding the Number of Three) be together in any lawful Employ or Labour for the Service of their Master or Mistress (and not otherwise) and only one of them have and carry such Lanthorn with a lighted Candle therein, the other Slaves in such Compay not carrying a Lanthorn and lighted Candle, shall not be construed and intended to be within the meaning and Penalty of this Law, any thing in this Law contained to the contrary hereof in any wise notwithstanding. Dated at the City-Hall this Two and Twentieth Day of April, in the fourth year of His Majesty's Reign, Annoq, Domini 1731.

By Order of Common Council,

Will. Sharpas, Cl.

CHAPTER 1: OBSERVING

Sixty years after the *Ballet de la Nuit*, further west, the Common Council of New York City legislated a “Law for Regulating Negro and Indian Slaves in the Nighttime.” It proclaimed, “no Negro or Indian Slave above the age of fourteen do presume to be or appear in any of the streets in the nighttime above one hour after sun sett without a lanthorn and a lighted candle.” These Lantern Laws, Simone Browne writes, converted the candle into a prosthesis that was made mandatory at night, “a technology that made it possible for the black body to be constantly illuminated from dusk to dawn, made knowable, locatable, and contained within the city.”¹ Reduced to their essence, separated from the bodies they extended, both the lantern and the Sun King’s costume were, fundamentally, lighting devices. And yet, it is in grafting them onto certain skins (and severing them from others) that national monarchies and colonial powers furthered their transformations into weapons of social order. Darkness, then, not only signaled the day’s retreat, it also instigated their conversion into prostheses that racialized surveillance and deified the monarchy.

Violent as they may be, both New York City’s mobile suns and Louis XIV’s radiant costume are but a few examples of the countless prosthetic devices that furthered the construction of the night as an opposition. Although no longer populating the nocturnal landscape, traces of their violence and retaliation survive, along with hints of the social expansions and relocations they necessitated or legitimized. Their separation from the bodies they once occupied does not signal the end of their oppressive systems; but rather, it attests to the versatile nature of these systems and their reliance on new ways, more devious ways, of compelling obedience. Moving away from the colonizer’s gaze, this chapter offers you an opportunity to craft a new alliance with the darkening sky; one that understands the night outside the realm of artificial illumination. At stake here is a prosthetic device that not only engages your body as a site of intervention, but one that awakens a shared fascination with the night to which countless civilizations have contributed. In thinking about your apparatus, consider what darkness means to *you*, to your family, to your ancestors. Consider the roles these meanings play in transmitting knowledge, in curating performances of remembering, and in the words of Momtaza Mehri, lubricating the machinery of collective mythmaking². Whether by tracing the movements of the moon and the sun, capturing the imprints they draw on the surface of our planet, tracking the cycles of stars and constellations, channeling the scents of night-blooming plants, joining the adventures of nocturnal beasts, or awakening forgotten myths and ancient legends, your prosthesis ought to enact an observation; one that unites your body with the rhythms and intricacies of the rising night.

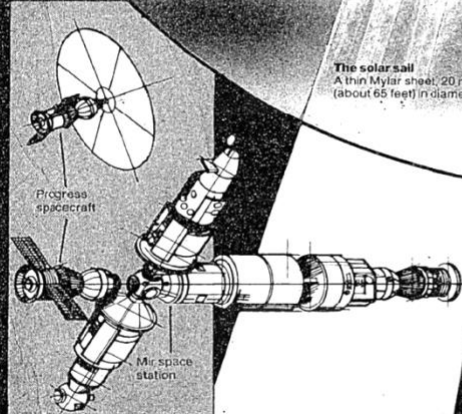
¹ Simone Browne, *Dark Matters*. 78

² Momtaza Mehri, *I See That I See What You Don’t See*. 333

Russians to Test Space Mirror As Giant Night Light for Earth

A reflector to be unfurled in space next month will cast the light of several full moons.

The solar sail
A thin Mylar sheet, 20 meters (about 65 feet) in diameter



Shining a Light Where It Is Needed

Like someone flashing a light with a hand mirror, the solar sail may focus sunlight where it is needed. Deploying the thin sheet of reflective plastic will also help in learning to unfurl larger sails for space navigation using the solar wind, a sparse flow of particles.



Planners estimate that sunlight reflecting from the solar sail could be as bright as three to five full moons. Several larger mirrors could equal 25 to 50 full moons.

By WARREN E. LEARY

RUSSIAN scientists are planning soon to unfurl a glistening sheet of plastic in space as a first step toward testing an intriguing notion about turning night into day — or at least twilight.

Tucked aboard a Progress cargo spacecraft attached to the Mir space station is an experiment called Znamya, or Banner, that will test the idea of using a mirror in space to reflect sunlight down to Earth.

If all goes as planned, the Banner payload will be deployed next month to unfurl into a 65-foot-diameter disk of aluminum-coated plastic film. The experiment will test the feasibility of illuminating points on Earth with light equivalent to that of several full moons.

Russian engineers say it should also teach them a lot about handling thin sheets of plastic in space, a step toward developing large sails to propel ships in space using the faint force of sunlight.

"This should be a marvelous technical demonstration," said James E. Oberg of Houston, an expert on Russian space programs who wrote the book "Red Star in Orbit."

"It's an idea they've talked about for a long time, and now they will have a chance to see if it works."

The Sun is always shining somewhere on Earth, of course, if not always where people need or want it. But what if someone put a big reflector high in space to peer over the curvature of Earth, capture some of the Sun's rays and shine them down on the dark side?

In much the way a schoolchild playing with a hand mirror learns to reflect a spot of light from a bright window into the crates of his room, some scientists believe they can put large, orbiting mirrors above Earth that could illuminate darkened areas below with spots of reflected sunlight that measure tens of miles across.

If it can be done, proponents say, providing sunshine at night could save billions of dollars each year in electrical lighting costs, extend twilight hours during planting and harvesting seasons to aid farmers, allow more working hours on large construction projects and help in rescue and recovery operations after natural disasters like earthquakes and hurricanes.

A consortium of state-owned companies and agencies in Russia, headed by the NPO Energia space company, is sponsoring the mirror-solar sail demonstration. The project is using some donated equipment, and engineers and technicians are volunteering their time. Proponents of the project hope a successful test will attract financial support from Western companies and the Russian Government.

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Why Light the Night?

Benefits of extended twilight include savings in the cost of outdoor lighting, extra hours for planting or harvesting crops, longer working hours for construction projects and easier rescue operations after disasters. Critics worry about possible harm to plants and animals.

CHAPTER 2: MAPPING

At the close of the twentieth century, a team of Russian scientists led by Vladimir Syromyatnikov launched into orbit a new **sun**. Endorsed originally by the Soviet government, the deployable satellite promised to maximize labor efficiency in Siberia and western Russia by turning night into day. Limiting daylight extension to polar farmlands, however, quickly proved unfulfilling for the team. “Consider what it will mean for the future of mankind,” declared Syromyatnikov upon announcing his plans to cast a bright light on major metropolitan cities. He argued that not only will the new **sun** reduce the cost of artificial illumination, but it will also support rescue operations, facilitate law-enforcement campaigns, and boost construction projects. These capitalistic declarations, however, did not pass unnoticed. Rather, they rallied under a banner of opposition several astronomers and environmentalists who saw in the forced illumination of the sky a transgression on the inalienable right to darkness³. “No one can own a darkness,” Momtaza Mehri reminds us, for “opacity belongs in the public domain.”⁴

The right to darkness, of course, is more significant than the right to the night sky. Particularly in cities, where light pollution conceals the workings of the cosmos, nightfall signals the start of overlapping cultural, economic, biological, and natural transformations. From night-shift workers rushing through the city after dark to consumers wandering across its shadowy streets, and from drowsy dwellers resting their bodies to crepuscular creatures satisfying their stomachs, these countless cohabitations attest to the social and material expansions of the nocturnal territory. In this chapter, your task is to foreground a process of transformation that is of interest to you; one that will help you choose a site of inquiry in or around Boston. Critical here is a practice of mapping that is not merely representational, but one that moves toward a new construction of the city. In avoiding conventional cartographic abstraction, this new construction, informed by objective and subjective readings of your surroundings, should reveal the ways through which our urban spaces support or obstruct nocturnal life. As such, we will ask ourselves, not only ‘*what are these maps showing?*’ but ‘*when are they showing it?*’ At stake is a vision of reality that is not necessarily homogenous, but one defined by frictions, hierarchies, visible and invisible barriers, and clashing demonstrations of order and civility (just like the city). In *Operative Mapping: Maps as Design Tools*, Roger Paez writes, “Maps don’t merely inform; they propose. They don’t offer a neutral representation of reality; they construct reality in a particular way. In that sense, cartography is a propositive discipline, and not simply a descriptive one.”⁵ In the next few weeks, your mission is to create and curate a series of maps and drawings at different scales (five compositions in total) that mediate between the personal and the collective, the analytical and the projective, as well as the real and the fictional. Each map should relate to the overarching story as does a chapter to a book. And together, they should carry the seed of a new design imagination.

³ Jonathan Crary, *24/7: Late Capitalism and the Ends of Sleep*. 5

⁴ Momtaza Mehri, *I See That I See What You Don’t See*. 339

⁵ Roger Paez, *Operative Mapping: Maps as Design Tools*. 9

CHAPTER 3: IMAGINING

In a 1971 conversation with Peter Blake, modernist architect Louis Kahn elaborated upon the relationship between his architecture and the sun: “Wallace Stevens said *What slice of the sun does your building have?* and I added *What slice of sun enters your room?* as if to say that the sun never knew how great it was until it struck the side of a building.” If Kahn’s quote works to position architecture at the center of the cosmos, transforming spaces into instruments that ennoble and tame celestial movements for the purposes of aesthetic consumption, then your task here is to suggest alternative ways of relating to the city and the universe. In the previous chapters, you orchestrated a reading of the night from the body to the territory, and vice versa. In Chapter 3, you will examine the potential of this reading within the frameworks of architectural and urban design. Here, considerations of space, structure, construction, materiality, and zoning enter in a dialogue with more nuanced definitions of the public, of stakeholders, and of the inhabitants of the nocturnal landscape. Building on the maps you produced and the sites of inquiry (and audiences) you identified, your first task in this chapter is to propose a program that carries obligations in space and time; be it a cenotaph for a missing night sky, a museum for nocturnal legends, a seed library for night-blooming plants, a village for crepuscular insects, a building for night-shift workers, a night school, an observatory, etc. At play is a lens of observation specific to the night, one that builds on the stories and transformations that only darkness uncovers. But the lens of intervention it provokes is not necessarily night-centric. Its products are not restricted to the order of the night but privilege the opportunities of social and material expansion enabled by the falling sun.

Suggested Readings:

Borges, Jorge Luis, and Di Giovanni Norman Thomas. *In Praise of Darkness*. New York: Dutton, 1974.

Cadogan, Garnette *Walking While Black*. Literary Hub, 2016. (Also check Garnette’s course at MIT: 11.S941 Werewolves, Wanderers, and Laborers: The City at Night, Spring 2022)

Crary, Jonathan. *24/7: Late Capitalism and the Ends of Sleep*. New York: Verso, 2014.

Ekirch, A. Roger. *At Day's Close: Night in Times Past*. Norton, 2006.

Koslofsky, Craig. *Evening's Empire: A History of the Night in Early Modern Europe*. Cambridge: Cambridge University Press, 2012.

Paez, Roger. *Operative Mapping: Maps as Design Tools*. New York: Actar Publishers, 2019.

Schivelbusch, Wolfgang. *Disenchanted Night: The Industrialization of Light in the Nineteenth Century*. Estados Unidos: University of California Press, 1995.

SCHEDULE

R 02/03	<i>Chapter 1: Observing</i>
F 02/04	Initial Thoughts
T 02/08	Desk Crits
R 02/10	<u>Workshop</u>
F 02/11	Desk Crits
T 02/15	Desk Crits
R 02/17	<u>Workshop</u>
F 02/18	Review: Chapter 1
T 02/22	No Studio
R 02/24	<i>Chapter 2: Mapping</i>
F 02/25	Initial Thoughts
T 03/01	Desk Crits
R 03/03	<u>Workshop: Mapping and Cartography</u>
F 03/04	Desk Crits
T 03/08	Desk Crits
R 03/10	Guest Lecture
F 03/11	Desk Crits
T 03/15	Review: Chapter 2
R 03/17	<i>Chapter 3: Imagining</i>
F 03/18	Initial Thoughts
T 03/22	Spring Break
R 03/24	Spring Break
F 03/25	Spring Break
T 03/29	Desk Crits
R 03/31	<u>Workshop: Zoning and Regulations</u>
F 04/01	Desk Crits
T 04/05	Desk Crits
R 04/07	<u>Workshop: Circulation and Accessibility</u>
F 04/08	Desk Crits
T 04/12	Mid-Review: Chapter 3
R 04/14	<u>Workshop: Structure and Materiality</u>

F 04/15	Desk Crits
T 04/19	Desk Crits
R 04/21	Guest Lecture
F 04/22	Desk Crits
T 04/26	Desk Crits
R 04/28	<u>Workshop: Details and Construction</u>
F 04/29	Desk Crits
T 05/03	Desk Crits
R 05/05	<u>Workshop: Image-making and Representation</u>
F 05/06	Desk Crits
T 05/10	Desk Crits
T 05/17	Final Review (Tentative)

GRADING DEFINITION

The final grade will represent the balance of attendance, participation, engagement in class discussions, incorporation of feedback, completion of assignments, individual growth over the semester, and quality of work produced in studio. The following criteria will be used for assessment and evaluation:

- 1. Thesis:** How clearly are you articulating your conceptual intentions?
- 2. Translation of Thesis:** How well are you using your thesis to develop an architectural response to given problems?
- 3. Representation Quality:** To what degree do your representations convey what they ought to?
- 4. Oral Presentation Skills:** How clearly are you presenting your ideas orally?
- 5. Participation in Discussions:** How actively are you involved in class discussions?
- 6. Response to Criticism:** How effectively do you take advantage of criticism from instructors, your classmates, and outside jurors?
- 7. Auto-Critical Skills:** To what extent are you able to critique your own work?

A. Excellent: Project surpasses expectations in terms of inventiveness, appropriateness, verbal and visual ability, conceptual rigor, craft, and personal development. Student pursues concepts and techniques above and beyond what is discussed in class.

B. Above Average: Project is thorough, well researched, diligently pursued, and successfully completed. Student pursues ideas and suggestions presented in class and puts in effort to resolve required projects. Project is complete on all levels and demonstrates potential for excellence.

C. Average: Project meets the minimum requirements. Suggestions made in class are not pursued with dedication or rigor. Project is incomplete in one or more areas.

D. Poor: Project is incomplete. Basic skills including graphic skills, model-making skills, verbal clarity, or logic of presentation are not level-appropriate. Student does not demonstrate the required design skill and knowledge base.

F. Failure: Project is unresolved. Minimum objectives are not met. Performance is not acceptable.

GRADING DEFINITION

1. Class Participation	10%
2. Chapter 1: Observing	15%
3. Chapter 2: Mapping	25%
4. Chapter 3: Imagining	50%

ABSENCE POLICY

Work in the studio will build sequentially. Therefore, your commitment to incremental development on a daily basis is of paramount importance. Charrettes before reviews will not suffice. The demanding nature and pace of this studio course necessitates regular attendance and requires that deadlines are consistently met. Group reviews are collective for a reason, as students have a lot to gain from their peers. Therefore, attendance for the duration of all formal reviews is mandatory. Greater than two absences from the studio without a medical excuse supported by a doctor's note or verifiable personal emergency could result in grade reduction.

STUDIO CULTURE

The Department of Architecture promotes a learning environment that supports the diverse values of the entire MIT community of students, faculty, administration, staff, and guests. Fundamental to the mission of architectural education is the stewardship of this diversity in a positive and respectful learning environment that promotes the highest intellectual integrity and cultural literacy. As architectural design learning is often accomplished through project-based activities during and outside of class times, maintaining this environment at all times is the responsibility of the entire community. Faculty and students should strive to understand and mutually respect the varied commitments of each other and work together to manage expectations of time and effort devoted to assignments, pin-ups, and public reviews.

ACADEMIC INTEGRITY

Massachusetts Institute of Technology students are here because of their demonstrated intellectual ability and because of their potential to make a significant contribution to human thought and knowledge. At MIT, students will be given unusual opportunities to do research and undertake scholarships that will advance knowledge in different fields of study. Students will also face many challenges. It is important for MIT students to become familiar with the Institute's policies regarding academic integrity, which is available at [Academic Integrity at MIT: A Handbook for Students](#).